SOUTHERN PACIFIC COMPANY

TUCSON DIVISION SPECIAL INSTRUCTIONS

No. 5

EFFECTIVE SUNDAY, APRIL 26, 1953
AT 12:01 A. M.,
MOUNTAIN STANDARD TIME

SUPERSEDING SPECIAL INSTRUCTIONS No. 4

THESE INSTRUCTIONS CONSTITUTE A PART OF THE TIMETABLE CURRENTLY IN EFFECT

R. E. HALLAWELL,
General Manager.

E. D. MOODY,
W. D. LAMPRECHT,
Assistant General Managers.

C. H. GRANT,
General Superintendent of Transportation.

V. E. ANDERSON,
Superintendent of Transportation.

G. A. BAYS,
Superintendent.

RULE M. Employes are warned that it is dangerous to ride on top or side of cars while passing points where impaired clearance exists, and that they must protect themselves from injury. See list of impaired clearances on main track and siding.

There are numerous other structures with impaired clearance on yard and station tracks on the division, and employes must be familiar with their location and avoid personal injury.

Employes must not ride on the side or top of engines or cars while such engines or cars are moving on tracks entering or within engine houses and shops where close side and/or overhead clearances exist.

RULE 7-A is revised to read:

"Yellow signals, and unattended red flags and red lights must be placed, and when practicable all signals by hand must be given, on the engineer's side. Other flag and lamp signals, fusees and torpedoes must be respected when received from or displayed on either side."

RULE 10-G. First paragraph is revised to read:

"When an unattended red flag or red light is displayed to the right of track in direction of approach, train, after stopping, must be preceded for a distance of three-fourths mile from point where signal is displayed by a flagman who must carefully examine track and structures."

RULE 10-J. Speed signs prescribing an increase in speed will not be installed on branches. Speed Restrictions tables will indicate permissible speeds between mile post locations named.

RULE 104-C. First paragraph is revised to read:

"When a train or engine is clear of main track, to be met or passed by a train, employee must not unlock derails or switches, nor be between the fouling point and main track switch. They must not be within 150 feet of any main track switch until the approaching train has passed."

RULE 206. Second paragraph will not apply to T&NO and SSW engines.

RULE 211. Form N train order may be issued to authorize lowering of train-order signal arm twice and its return to stop position as a calling-on signal, at stations where letter type indicator for display of letter "M" is not installed, and such operation of the signal will be an indication to an approaching train that orders are to be delivered which will authorize movement to the next station at least, against and ahead of, all superior trains. Engineer must acknowledge this calling-on signal by sounding signal 14(b), and will proceed on main track to receive orders.

If train is delayed between the time of acknowledging the calling-on signal and receipt of train orders, protection by flagman against any superior train must be provided.

Operation of the signal in above manner is prohibited unless operator has received Form N train order, and provided time limit named in the order has not expired.

RULE 283. Movements governed by semaphore type diverging route signals displaying "Proceed on Diverging Route", Figs. A and B, must be made with caution.

RULES 281 and 285. Movements against the current of traffic governed by semaphore type dwarf signals displaying "Proceed", Fig. E, Rule 281; or by light type dwarf signals displaying "Proceed not Exceeding Medium Speed", Fig. G, Rule 285, must be made with caution and position of switches observed.

RULE 306. Second paragraph is revised to read:

"When a signal with triangular plate protecting a spring switch displays stop indication, except when the switch is lined by hand for the movement, member of crew must open and close spring switch by hand, removing any obstruction."

RULE 505. AUTOMATIC BLOCK SIGNAL SYSTEM

PUSH BUTTONS

Where signal protection is provided for movements from an adjacent track to main track, push buttons and pilot lights are installed in box near each of the two signals, with time-release feature, to clear signals on one track when the control circuit on the other track is occupied. Within interlocking limits signal operator's permission must also be obtained before lock box door is opened.

Train on main track to let train on siding pass may clear signal on siding by pressing button bearing number of signal on siding. Train on siding to let train on main track pass should not pass Approach Circuit sign, but when necessary to do so, may clear signal on main track by pressing button bearing number of signal on main track.

Press push button until pilot light appears, then release, after time-release has operated signal will clear.

Trains required to enter sidings where signals are arranged as above must not pass home signal until switch has been lined for siding.

Further instructions posted inside push button box.

ELECTRIC SWITCH LOCKS

Where electric switch locks are installed, lock box door must not be opened if movement is to be made into a track leading from main track until engine or car is standing within 150 feet of the switch; or if movement is to be made from such track, or through a crossover to a main track, until block indicator indicates block clear on opposite track.

After lock box door is opened lock lever cannot be moved to opposite position to release switch for hand throwing until indicator in lock box indicates "unlocked".

Lock lever must not be returned to locked position until all movements over the switch are completed, switch returned to normal position and locked.

When block indicators indicate "block occupied", instructions posted inside lock box for operation of push button to start time-release must be complied with if movement is to be made to main track while approach circuit is occupied by another train, in addition to providing flag protection when necessary.

Emergency lock release is to be used only in case of electrical or mechanical failure, as indicated by failure of time-release to function after several minutes. When necessary to break seal on emergency lock release, train dispatcher's permission must first be obtained, and movement made only after flag protection provided on both tracks.

Low type electric locks, such as are applied direct to lever of hub type switch stands, function as above except that the removal of the switch padlock has the same effect as opening the lock box door. Instead of being equipped with an "unlocked" indicator, these locks have a pilot light that indicates by illumination when the lock is unlocked.

MECHANICAL SWITCH LOCKS

After lock box door is opened lock lever may be moved upward against stop. After a time interval of from one to seven minutes indicator will show UNLOCKED and lever may be moved to reverse position "R". Switch may then be operated in usual manner.

Lock lever must not be returned to normal position "N" until all movements over the switch are completed and switch returned to normal position and locked.

Emergency lock release is to be used only in case of mechanical failure, as indicated by failure of time release to function after several minutes. When necessary to break seal on emergency release, train dispatcher must be notified immediately and movement made only after necessary flag protection is provided.

SPRING SWITCHES

RULE 535. Maximum speed for trailing movement when the spring is to be actuated, and maximum speed for facing movement with switch points in normal position, as indicated in Speed Restrictions tables must not be exceeded.

RULE 536. First paragraph is revised to read:

"When a trailing movement is to be made over a spring switch equipped with a facing point lock, and the initial movement of the switch points is not actuated by the engine, switch must be lined for the movement. Employe so lining the switch must again line it for normal position after movement has been completed, unless he has arranged for another employe to do so."

GENERAL REGULATIONS

RULE 821. Speed of equipment over inundated tracks must not exceed 3 MPH, and the depth of water above top of rail must not be more than the following:

Diesel engines	3 inches
Passenger cars and steam engines equipped with roller bearings	6 inches
Other passenger cars and steam engines	12 inches

RULE 822. Third paragraph is revised to read:

"When a movement is being made, except for uncoupling car from engine, employes must not stand or ride between engine and car, or between two engines, either on pilot, footboard or footboards. They must not go between moving cars or between engine and car in motion, nor ride on pilot, leading footboard or footboards while passing over road crossings or operating on public streets. Not more than one employe is permitted to ride on pilot, leading footboard or footboards in direction of movement at any time."

RULE 824. Instructions for setting hand brakes:

At points where hand brakes must be set on freight trains such brakes must be securely set, using standard brake club to set staff brakes, after train or cut has stopped, unless yardmen immediately take charge and yard engine is coupled to cars. Any employe releasing any of these brakes must set as many others to replace them.

RULE 825. Second paragraph is revised to read:

"Cars must be kept clear of any street or public crossing, and at least one hundred feet from the crossing when practicable."

RULE 831 is revised to read:

"Pile drivers, locomotive cranes, and any other work equipment having butt couplers (no draft gear), scale test cars, and all wooden underframe cars must be handled near rear of train ahead of caboose but behind any helper engine. When practicable all other work equipment, including steel underframe outfit cars, power shovels, derricks, spreaders, ditchers, pile drivers and locomotive cranes should be similarly handled in train. It will not be necessary to keep wooden underframe cars in one block when so handled.

Women and children must not be permitted to ride in outfit cars when moved by freight or mixed train. Other occupants of outfit cars must remain inside and not ride on top, sides or between these and other cars during course of road or yard movements."

RULE 832 is cancelled.

RULE 836. Outside of yard limits cars shoved ahead of engine between stations on descending grade must be chained to the engine. Switching movement on descending grades must be protected by a derail. When practicable engine must be kept on descending grade end of cars.

RULE 849. Train heat valve will not be opened approaching Yuma or Tucson on Nos. 1, 2, 3 and 4, nor approaching Phoenix on Nos. 1 and 2, unless it is known in advance that engine is to be changed or train is to be switched, in which case second paragraph of Rule 849 must be complied with. In the event it is necessary to detach engine or cars after arrival, precautions must be taken to see that no injury results from escaping steam in uncoupling steam connections.

AIR BRAKE RULES

FREIGHT TRAINS

RULE 3. Standard brake pipe pressure on No. 370, AON, is 90 pounds.

RULE 13. Should all power units of a diesel engine running light or while handling train become inoperative on a grade, light engine or train, after stopping, must be immediately secured with hand brakes and engine wheels secured by blocking or chains.

MISCELLANEOUS

1. In all cases where it is necessary to make a short move with heavy freight train to reach water or oil column, including that required to spot second engine of double-headed train, engine must be cut off before spotting at column.

4. Pushing trains out of yards:

(a) Engines must not be placed behind a wooden underframe caboose or other wooden underframe equipment.

(b) Engines weighing more than 330,000 lbs. on the drivers must not be placed behind steel underframe cabooses.

(c) Air must not be coupled through the pusher engine.

(d) Knuckle must not be removed, or closed, or cutting lever temporarily fastened in release position on a pusher engine, as means of preventing coupling being made.

5. Helper service:

(a) Helper engines must not be placed behind wooden underframe cars or wooden underframe cabooses.

(b) Engines weighing more than 330,000 lbs. on the drivers must not be placed behind steel underframe cabooses.

(c) Not more than one helper engine will be placed behind steel underframe cabooses.

Not more than two engines, including road engine may be placed on head end of any freight train. AC class helper must not be added to head end of any freight train with AC class road engine. When engines are coupled together on head end smaller engine should be placed ahead of larger engine. When additional helpers are required, they will be placed back in train and cut in ahead of any cars of wooden frame construction, and when practicable should be placed behind a loaded car.

Helper or doubleheader engines must not be placed on head end of freight trains powered by DF-1 to 12 class engines.

When one diesel helper is used it will be placed on head end; when two diesel helpers are used, one will be placed on head end and one on rear end; when one diesel and one steam engine are used as helpers the diesel will be placed on head end and steam engine helper on the rear.

When using steam helpers with DF-1, 2 class engines, rating of steam engines must be reduced 100 tons.

Air will be cut in on all helper engines, and engine must not be cut off when train is in motion.

When used as helpers in rear of train, AC or MM class engines must not be coupled together, nor may more than two F, Mt, or heavier class, or more than three smaller classes be coupled together. When coupled, larger engines must be placed ahead of smaller engines. If tonnage requires more power, additional helpers of not to exceed two coupled in each case, must be separated by at least four cars.

Helpers must not be operated backing except in emergency, and in such case engines should not push through a backing engine if it can be avoided.

Helper engines coupled in middle or rear of train must be uncoupled from forward portion before taking water. On grades road engine and helper must not be uncoupled from train at the same time without sufficient hand brakes being securely set.

10. Flat cars loaded with poles, piling or other lading which may shift, must not be spotted nor empty cars spotted for loading such lading on tracks adjacent to main track without authority from chief train dispatcher, who will protect with train order.

27. Should a passenger train, irrespective of the type of power being used, be stopped in a tunnel, air conditioned cars within the tunnel must immediately have the air conditioning systems, including ice engines and engine generators, shut off, fresh air intake shutters closed, and blower fans shut off.

Should a diesel-powered train be stopped with the engine in a tunnel and it is found that, in the case of a passenger train it cannot be moved within five minutes after stopping, and in the case of a freight train it cannot be moved within a reasonable length of time, trainmen and enginemen must take necessary precautions to prevent movement. Independent brake and sufficient hand brakes must be immediately applied. Engine wheels must be secured by blocks or chains, and power plants and steam generators, if any, on diesel engine shut down.

SPEED RESTRICTIONS FOR ENGINES: Maximum speed shown below is subject to further restrictions applicable to certain territories as shown in Speed Restrictions for Trains:

NOMINAL CLASS	RUNNING FORWARD		RUNNING BACKWARD WITH TRAIN OR LIGHT
	WITH TRAIN	LIGHT	
AC	60	50	25
C	40	35	30
DF-1 to 9 (6138 to 6201; 6204 to 6407; 6424 to 6439)	55	55	30
DF-4, 9, 11, 12 (6202, 6203, 6408 to 6423; 6440 to 6461)	65	55	30
DF-100 to 112, 114, 115	50	40	40
DF-200 to 204	40	40	40
DF-300 to 302	50	40	40
DP	79	70	30
DS-1 to 8, 100 to 111, 113 to 115	40	40	40
DS-200, 201	30	30	30
F	50	40	30
GS	75	55	30
M	50	35	25
Mk-2, 4	40	30	30
Mk-5, 6, 7, 8, 9	50	40	30
Mk-10, 11	35	30	30
MM	35	30	25
Mt	75	55	30
P-1, 3, 4, 5, 6	65	55	30
P-7, 8, 10, 12	75	55	30
S, SE	20	20	20
SP	55	35	30
T-1, 23, 28, 31	50	35	30
T-32, 40	60	40	30
TW	40	30	30
T&NO DF-4, 9 (338 to 357)	65	55	30
SSW (801 to 818)	70	50	30
Any engine not listed	35	35	25

Steam engines operated in backward motion, and DF and DP class engines operated with engineer in other than the lead unit in direction of movement, must not exceed 30 MPH on all curves and 20 MPH when approaching highway or street crossings at grade.

Steam engines coupled tender to tender must not exceed speed permitted same engines running light backward.

Maximum speed of engines under following conditions, running under own steam, or hauled in train:

When all weight has been removed from any one pair of drivers	20 MPH
When all weight has been removed from only one wheel of any pair of drivers	30 MPH
When engine truck is removed	20 MPH
When main rod only is removed	30 MPH
When side rod only is removed	30 MPH
When both main and side rods are removed	20 MPH

Dead or disabled engines, and equipment listed in timetable which requires movement at reduced speed must first be reported as ready to move to the chief train dispatcher, who will designate the train in which the engine or equipment is to be moved. Any such engine must not be handled in train until train order designating maximum speed is issued.

Maximum speed of trains handling dead engines of S or SE class 20 MPH; other steam engines 40 MPH; and diesel engines the speed shown for same engine running forward light.

When a diesel locomotive is derailed, attempt to rerail it must not be made unless an officer or supervisor of the Mechanical Department (or in their absence other qualified officer) is present.

Dead locomotives, either steam or diesel, hauled in train and weighing 150,000 lbs. or more on the drivers should be placed not less than 8 cars behind road locomotive. If weight on drivers is less than 150,000 lbs., dead locomotive should be placed near rear of train. Dead road locomotives should be headed in direction of movement when possible.

Unless otherwise restricted, two dead road locomotives may be coupled together for movement. When necessary to separate them, or when an S or SE class and a road locomotive are moved dead in train, a steel underframe freight car must be placed between them, and S or SE class locomotive entrained with tender head.

Movement of foreign line engines, in service or dead in train, must not be authorized until provisions of current Line Clearance Circular have been complied with.

When train-order is received indicating that main track is out of service and that trains are to be detoured through a siding or other track, or over a shoofly, necessitating a reduction in normal train speed, signal 16(f) must be sounded on passenger trains one mile before reaching point where train must reduce speed, which must be acknowledged by whistle signal 14(g).

MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT	MPH MAIN TRACKS OTHER THAN BRANCHES	MPH MAIN TRACKS ON BRANCHES
Cars and loads with height, width or weight greater than shown in Line Clearance Circular (when movement is authorized)	40	25
Twin or multiple loads	40	25
Scale test cars	40	30
Cars with arch bar trucks	40	30
Steel pile-drivers	40*	30*
Relief outfits with steam derrick, except:	35*	25*
(Relief outfits 7014 and 7025 must not be operated on any branch except Litchfield, Nogales and Creamery branches.)		
Power shovel on own wheels	35*	25*
Ditchers on own wheels, except:	35*	25*
SPMW-4044	25*	25*
Car-top ditchers, if blocking and tie-down cables are removed	35*	25*
K&J, Western, and Oliver, pedestal or center-hinged air-dump cars	35*	25*
Locomotive cranes:		
With boom disconnected, heavy end forward	35*	25*
With boom disconnected, light end forward	20*	15
With boom in place, either end forward	25*	15
Rotary snow plows	25	15

*These speeds must not be exceeded, and on curves where authorized speed is more than 15 MPH speed must be reduced 5 MPH less than shown in timetable and on speed signs.

OTHER MAXIMUM SPEEDS	MPH PASSENGER TRAINS	MPH FREIGHT AND MIXED TRAINS
Foreign steel-wheel cars not equipped with high speed trucks	60	*55
Trains of deadhead equipment, with caboose	55	..
Passenger trains, with caboose	55	..
Engine and caboose only, except:	..	55
must not exceed speed for same engine running forward light.		
Engine, flanger and caboose only, except:	..	40
On curves	..	30
Logs loaded on flat or logging cars, except:	..	25
On curves	..	20
Over truss bridges, through tunnels, and passing stations	..	15

*60 MPH permitted when handled in AON.

All cars handled in passenger trains must be equipped with steel-tired or all-steel wheels. Cars not so equipped must move in freight trains, passengers, if any, to move on passenger trains.

Passenger carrying cars, baggage, express and other head-end cars, unless equipped with steel center sills and steel platforms must not be handled in passenger trains except on authority of Superintendent.

When foreign steel-tired or all-steel wheel cars are picked up by passenger trains at points where no car inspectors are on duty, conductor must contact train dispatcher to determine applicable speed restriction for the movement.

Freight cars must not be handled behind occupied passenger carrying cars, except in military or naval mixed trains.

When moving against current of traffic, or when movement is not protected by block signals, speed of passenger trains must not exceed 50 MPH, and speed of freight trains and light engines must not exceed 40 MPH, nor may speed exceed that applying to normal operation. Unless proceed signal received, or it is known that warning devices are operating, such trains and engines must stop approaching road crossings where automatic warning devices are installed, and may proceed after member of crew protects crossing.

RULE 10-J. Round yellow speed signs indicate the speed restrictions applying to passenger trains with electro-pneumatic brakes on all cars, and with diesel passenger engine, except will apply to Streamlined GOLDEN STATE and SUNSET LIMITED with or without electro-pneumatic brakes.

Speed signs for eastward trains at MP 736.76 reading "35," and at MP 904.74 reading "15" are located to left of the track.

RULE 14(e). As specified below, — — — — — — sounds will be indication that flagman may return from east:

Wellton . . . . . . Trains on Phoenix line,
Litchfield Jct. . Trains on Litchfield Branch.

RULE 21-C. At Phoenix, Gila and Yuma, incoming engines may display indicators until arrival at roundhouse.

RULE 93. Yard limits within which the provisions of Rule 93 will apply are established at the following points:

West MP		East MP
731.51	Yuma	737.83
	" (Yuma Valley RR)	0.22
768.88	Wellton	771.00
	" (Gila line)	771.00
900.96	Phoenix	908.79
854.20	Gila	857.70

Shoving of cars on either main track or drill track between Yuma and East Yard is prohibited, except when switching packing sheds located on drill track.

Not more than one movement in either direction is permitted on the drill track between Yuma and East Yard.

Phoenix Yard: Freight trains arriving or departing must receive proceed signal from yardman, white flag by day, green light by night, before passing 7th St., or 16th St.

RULE 99-A. Will apply to passenger trains standing on passenger tracks at Phoenix.

RULE 103-A. A flagman must precede all movements over:

Yuma . . . . 1st, 2nd, 3rd and 4th Sts., on yard tracks,
Dateland . . . . . U. S. Highway 80, on Government spur.

RULE 103-B. Back-up hose must be used on leading car when shoving cars on Government tracks at airport at Yuma.

RULE 104. Normal position of rigid switches at the end of double track and at junctions, is as follows:

Phoenix . . . . Switch in eastward main track, immediately west of First Avenue, Phoenix, from main track to eastward main track,
Phoenix . . . . West end double track, for westward track,
Litchfield Jct. . Litchfield Br., for Phoenix line,
Yuma . . . . Yard track on Madison Ave., for YVRR main track.

Normal position of west crossover switch from yard track 1 to eastward main track at East Yard, is for tail track.

Derails in main track:

Litchfield Park, 70 feet west of west switch of team track.

RULE 306. The following block signals equipped with triangular plate bearing the letter "P" have included in their control limits some special protective device. Absolute signals are listed as "P-A".

Eastward Signals	Protection	Westward Signals
P-A P-A	Spring switches, east and west ends Colorado River bridge	P-A P-A P-A P-A
P-7372 P-7374	Spring switch, end double track, East Yard	P-7375
P-7428	Spring switch, west end siding, Fortuna	
	Spring switch, east end siding, Fortuna	P-7441
P-7500	Spring switch, west end siding Kinter	P-7501 P-7503
P-7510 P-7512	Spring switch east end siding, Kinter	P-7513
P-7532	Spring switch, end double track, Dome	P-7535
P-7600	Collision Detector, Ligurta underpass, MP 760.61	P-7615
P-7756	Spring switch, west end siding, Tacna	
P-7836	Spring switch, west end siding, Colfred	
	Spring switch, east end siding, Colfred	P-7849
P-7920	Spring switch, west end siding, Mohawk	P-7921 P-7923
P-7930 P-7932	Spring switch, east end siding, Mohawk	P-7931
P-8002	Spring switch, west end siding, Stoval	
P-8190	Spring switch, west end siding, Stanwix	
P-8252	Spring switch, west end westward siding, Sentinel	
P-8398	Spring switch, west end siding, Piedra	
P-8494	Spring switch, west end siding, Smurr	
P-9052	Spring switch, west end passenger lead, Phoenix	
	Spring switch, east end double track, Phoenix Yard	P-9075

RULE 505. AUTOMATIC BLOCK SIGNAL SYSTEM

Yuma: Eastward freight trains must not pass Signals 7340 and 7342 unless proceed signal received from yardman, white flag by day, green light by night.

East Yard: Westward trains entering yard tracks must not pass Signal P-7375 unless proceed signal received from yardman, white flag by day, green light by night.

Phoenix: Crossing—AT&SFRy Wye: If signal indicates "Stop" trains and engines must stop, and if wye is clear of intersecting movement, may then proceed as prescribed by Rules 509 or 510, but must provide flag protection on intersecting track unless derail is known to be in derailing position.

Eastward trains and engines to move on main track east of passenger lead, must stop before reaching Signal P-9052 until spring switch has been lined for main track, and signal displays proceed indication for such movement.

Main track has no block signal protection between Signal 9061 and end of double track; and double track has no block signal protection from west end to Signal 9064.

PUSH BUTTONS

Push button and light on side of relay case on Signals 7501 and 7512 at Kinter and Signal 7921 and 7932 at Mohawk.

RULE 516. Overlap posts:

Tolleson	450 feet east of Signal 8958	Eastward trains
Tolleson	750 feet east of MP 895.00	Westward trains
23rd Ave. Phoenix	Middle of siding	Eastward trains
23rd Ave. Phoenix	Middle of siding	Westward trains

RULE 535. SPRING SWITCHES

Spring switches equipped with facing point locks are located as follows:

Location		Normal Position
Yuma	West end bridge, end double track	Westward track
Yuma	East end bridge, end double track	Eastward track
East Yard	End double track	Westward track
Fortuna	West end siding	Main track
Fortuna	East end siding	Main track
Kinter	West end siding	Main track
Kinter	East end siding	Main track
Dome	End double track	Eastward track
Tacna	West end siding	Main track
Colfred	West end siding	Main track
Colfred	East end siding	Main track
Mohawk	West end siding	Main track
Mohawk	East end siding	Main track
Stoval	West end siding	Main track
Stanwix	West end siding	Main track
Sentinel	West end siding	Main track
Piedra	West end siding	Main track
Smurr	West end siding	Main track

Spring switches not equipped with facing point locks are located as follows:

Location		Normal Position
Phoenix	Main track at passenger lead	Passenger lead
Phoenix Yard	East end double track	Westward track

Yuma: Spring switch on engine lead equipped with switch-point indicator. Rule D-539 will apply.

RULE 605. INTERLOCKING

Wellton: Limits extend from westward interlocking signals 4,300 feet east of station building on Gila line and 4,600 feet east of station building on Phoenix line, to eastward interlocking signals 1,000 feet west of station building on westward track and 1,600 feet west of station building on eastward track.

The derail at east end of siding is electrically locked, and can be operated by trainmen only when released by signal operator.

Switches and derails on spurs leading from westward main track, just west and east of station building are hand thrown, but must not be used until permission is secured from signal operator.

RULE 705. LETTER TYPE INDICATORS

Indicators located as follows:

Illuminated Letter	On Post at MP	Approaching	Authorizes and Requires Movement as Follows
M	769.20	Wellton	Proceed to interlocking limit,
S	769.20	Wellton	Enter siding.

RULE 740. ABSOLUTE-PERMISSIVE BLOCK

YUMA-COLORADO

Limits extend from absolute signals west of Colorado River bridge to absolute signals east of Colorado River bridge.

Trains stopped by absolute signal west of bridge must obtain permission from yardmaster, and also make inspection of spring switches at each end of bridge before proceeding.

GENERAL REGULATIONS

RULE 824. Instructions for setting hand brakes:

Yuma:	Freight trains	Four brakes on east end, Two brakes on west end;
East Yard:	Freight trains	Two brakes on east end, Five brakes on west end;
Phoenix Yard:	Freight trains	Two brakes on west end, Two brakes on east end.

AIR BRAKE RULES

FREIGHT TRAINS

RULE 22. Trainmen must not couple air hose on outgoing freight trains at Gila until train is made up and engine and caboose on train, unless train is made up by crew making air test and handling the train from Gila.

Terminal test outlined in this rule, after having been made at originating terminal on through freight trains, will not be made at intermediate terminal Gila, except when cars are added to the consist. Instead, test will be made as outlined in Air Brake Rule 25—Rear end test. Changing crews, caboose, and/or engine, will not necessitate terminal test outlined under Air Brake Rule 22.

RULE 25. After terminal test outlined in Air Brake Rule 22 has been made at originating terminal, rear end test outlined in Air Brake Rule 25 will be made at intermediate terminal Gila on freight trains moving through without cars being added to the consist or on which only crews, caboose, and/or engines, may be changed. Under these conditions, rolling inspection by trainmen will be made on freight trains arriving and leaving the intermediate terminal.

PASSENGER TRAINS

RULE 39. Running air-brake test not required of eastward passenger trains approaching Crossing—AT&SFRy Wye.

MISCELLANEOUS

1. Aztec and Sentinel, water for engine purposes is treated and must not be taken for domestic use except as follows:

Aztec, by closing valve between treater and water column.

Wellton, emergency water supply only. If necessary to take water, take only enough to reach next water supply.

5. Litchfield, gate at entrance Airplane spur is locked with Government lock, and to gain entrance a long and short sound of whistle will be notification to watchman on duty to take care of the opening and closing of the gate.

Litchfield Park, Boswell spur is protected by gate, which must be kept closed and locked when not in use.

10. Engines must not use Seaside Oil Co. spur at Buckeye.

DF class engines heavier than 331,000 lbs., and steam engines heavier than 235,000 lbs. on drivers must not be used on Litchfield Branch.

Derail on Government spur at Dateland, 360 feet west of main track switch.

Load limit (car and contents):

Yuma-Phoenix Yard	251,000 pounds
Wellton-Gila	251,000 pounds
Litchfield Jct.-Litchfield Park	210,000 pounds

Unless authorized by Superintendent, heavier loads must not be handled.

LOCATION OF OVERHEAD AND SIDE STRUCTURES NOT STANDARD CLEARANCE ON MAIN TRACK AND SIDINGS

Mile Post	Location	Description
778.00	Gila River bridge	Side
891.00	Agua Fria River bridge	Side
YVRy MP-10.00	Canal Spillway gates	Side

SPEED RESTRICTIONS FOR OTHER THAN MAIN TRACKS	With Caution Not Exceeding MPH
Through sidings, yard and other tracks, wyes, balloon tracks, crossovers and turnouts, except:	15
Through slip switches	10
Through turnouts on other than sidings	10
On branches	10
Through all sidings, yard tracks and other tracks with engine running backward	10
★Over, upon, or across any street crossing, Yuma	5
On Government tracks at Yuma airport	10
" (with engine backing)	5

★Regulated by city ordinance.

SPECIAL INSTRUCTIONS—WELLTON SUBDIVISION

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in SPEED RESTRICTIONS FOR ENGINES appearing on page 4, and MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT and OTHER MAXIMUM SPEEDS appearing on page 5 of Special Instructions for All Subdivisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES	
				RUNNING FORWARD	RUNNING BACKWARD
Column:	A	1	2	3	4
EASTWARD, YUMA TO PHOENIX YARD:					
MP MP					
732.29 to 732.37 (until engine passes spring switches)	16	6	6	6	#..
732.37 to 733.01 (Yuma)	15	15	15	15	15
733.01 to 734.23	20	20	20	20	20
734.23 to 737.49	60	60	40	40	30
737.49 to 737.51 (spring switch)	35	35	35	35	#..
737.51 to 745.61	79	70	55	50	30
745.61 to 748.58	75	70	55	50	30
748.58 to 755.12	40	40	35	35	30
755.12 to 762.88	50	50	35	35	30
762.88 to 769.68 (Wellton)	60	60	40	40	30
769.68 to 770.66	50	50	35	35	30
770.66 to 770.72 (thru east crossovers)	25	25	20	20	20
770.72 to 771.01	50	50	35	35	30
771.01 to 776.36	79	70	55	50	30
776.36 to 778.22	55	55	40	35	30
778.22 to 840.00	79	70	55	50	30
840.00 to 845.93	79	70	50	50	30
845.93 to 847.90	60	55	45	45	30
847.90 to 857.00	79	70	50	50	30
857.00 to 875.35	79	70	55	50	30
★875.35 to 876.07	25	25	25	25	25
876.07 to 887.40	79	70	55	50	30
887.40 to 887.65	60	55	50	50	30
887.65 to 890.52	79	70	50	50	30
890.52 to 891.19	60	55	50	50	30
891.19 to 893.50	79	70	50	50	30
893.50 to 894.50	60	55	50	50	30
894.50 to 903.00	79	70	55	50	30
903.00 to 904.77	40	40	25	25	25
904.77 to 905.49	20	20	20	20	20
905.49 to 905.51 (spring switch)	15	15	15	15	15
905.51 to 907.43 (Phoenix Yard)	20	20	20	20	20
EASTWARD, WELLTON TO GILA:					
769.68 to 770.83	..	50	35	35	30
770.83 to 787.00	..	70	55	50	30
787.00 to 792.50	..	70	50	50	30
792.50 to 794.03	..	30	30	30	30
794.03 to 795.00	..	50	35	35	30
795.00 to 822.41	..	70	55	50	30
822.41 to 823.61	..	50	35	35	30
823.61 to 825.18	..	45	35	35	30
825.18 to 854.97	..	70	55	50	30
854.97 to 856.80 (Gila)	..	30	30	30	30
EASTWARD, LITCHFIELD JCT. TO LITCHFIELD PARK:					
889.70 to 894.70	..	20	20	20	15

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES	
				RUNNING FORWARD	RUNNING BACKWARD
Column:	A	1	2	3	4
WESTWARD, PHOENIX YARD TO YUMA:					
MP MP					
907.43 to 905.51	20	20	20	20	20
905.51 to 905.49 (spring switch)	15	15	15	15	15
905.49 to 904.77	20	20	20	20	20
904.77 to 903.00	40	40	25	25	25
903.00 to 894.50	79	70	55	50	30
894.50 to 893.50	60	55	50	50	30
893.50 to 891.19	79	70	50	50	30
891.19 to 890.52	60	55	50	50	30
890.52 to 887.65	79	70	50	50	30
887.65 to 887.40	60	55	50	50	30
887.40 to 876.07	79	70	55	50	30
★876.07 to 875.35	25	25	25	25	25
875.35 to 857.00	79	70	55	50	30
857.00 to 847.90	79	70	50	50	30
847.90 to 845.93	60	55	45	45	30
845.93 to 840.00	79	70	55	50	30
840.00 to 778.22	79	70	55	50	30
778.22 to 776.36	55	55	40	35	30
776.36 to 771.01	79	70	55	50	30
771.01 to 770.00	50	50	35	35	30
770.00 to 769.85 (over switches)	25	25	25	25	25
769.85 to 769.68 (Wellton)	50	50	35	35	30
769.68 to 762.88	60	60	40	40	30
762.88 to 755.12	50	50	35	35	30
755.12 to 753.27	40	40	35	35	30
753.27 to 753.25 (spring switch)	35	35	35	35	#..
753.25 to 748.58	40	40	35	35	30
748.58 to 745.61 (East Yard)	75	70	55	50	30
745.61 to 737.51	79	70	55	50	30
737.51 to 733.01 (Yuma)	20	20	20	20	20
733.01 to 732.37 (spring switch)	15	15	15	15	#..
732.37 to 732.29 (until engine passes spring switches)	15	6	6	6	#..
WESTWARD, GILA TO WELLTON:					
856.80 to 854.97	..	30	30	30	30
854.97 to 825.18	..	70	55	50	30
825.18 to 823.61	..	45	35	35	30
823.61 to 822.41	..	50	35	35	30
822.41 to 795.00	..	70	55	50	30
795.00 to 794.03	..	50	35	35	30
794.03 to 792.50	..	30	30	30	30
792.50 to 787.00	..	70	50	50	30
787.00 to 770.83	..	70	55	50	30
770.83 to 770.78	..	50	35	35	30
770.78 to 770.72 (crossover)	..	25	20	20	20
WESTWARD, LITCHFIELD PARK TO LITCHFIELD JCT.:					
894.70 to 889.70	..	20	20	20	15

★Regulated by City ordinance. #See Rule 536.

*Streamlined passenger trains are those having electro-pheumatic brakes on all cars, and with diesel passenger engine, except Streamlined GOLDEN STATE and SUNSET LIMITED may operate at speeds shown in Column A with or without electro-pneumatic brakes.

Passenger trains with electro-pneumatic brakes on all cars, and with GS-4 to 6 or Mt-4 class engine, may run not to exceed 75 MPH on tangent track where 70 MPH is authorized in Column 1.

Maximum speed provided for passenger trains, other than streamlined passenger trains, will apply to No. 370, except that maximum of 60 MPH must not be exceeded at any point.

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Yuma to East Yard MP 789 to Mohawk MP 822 to Sentinel	East Yard to MP 789 Mohawk to MP 822 Sentinel to Gila Wellton to Saddle 2 M W Gillespie to Phoenix Yard	Saddle to 2 M W Gillespie	Gila to MP 796, Mohawk to Blaisdell Fortuna to Yuma Phoenix Yard to 2 M E Crag 2 M W Gillespie to Wellton	Blaisdell to Fortuna 2 M E Crag to 2 M W Gillespie	MP 796 to Mohawk
DP-3	6017	3650	3750	2300	3750	3750	2975
DP-4, 7	6000 to 6004, 6018	3650	3750	2300	3750	3750	2975
DP-5, 6	6005 to 6016	....	....	....	....	....	....
DP-8, 9	6019 to 6027	....	....	....	....	....	....
DF-1 to 9, 11, 12	6138 to 6461	8450	9725	6400	13600	9725	7025
DF-100	5200 to 5202	....	....	....	....	....	....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	2850	3325	2150	4800	3325	2350
DF-109, 111	5250 to 5252, 5503 to 5505	....	....	....	5000	4875	3425
DF-200 to 204	5100 to 5118	....	....	....	....	....	....
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....	....	....
DS-1 to 8	1000 to 1032	900	1025	660	1475	1025	730
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	1350	1575	1025	2225	1575	1125
DS-110, 114	1442 to 1463, 1492 to 1499	1875	2000	1300	2900	2000	1525
DS-113	1486 to 1491	1650	1925	1300	2700	1925	1375
DS-200, 201	1900 to 1903	....	....	....	....	....	....
M-4	1617 to 1713	1275	1450	950	2150	1450	1050
M-6, 8	1721 to 1803, 1824, 1825	1525	1800	1125	2500	1800	1250
M-9	1804 to 1817, 1826 to 1830	1625	1900	1200	2650	1900	1325
M-11	1832 to 1835	1675	1975	1250	2750	1975	1375
T-1	2248, 2252	1125	1300	825	1850	1300	900
T-23	2302 to 2310	1600	1875	1175	2650	1875	1325
T-28, 31	2312 to 2362	1775	2075	1300	2925	2075	1450
T-32	2363 to 2370, 2372 to 2384	1800	2100	1325	2975	2100	1475
T-40	2371	1800	2100	1325	2975	2100	1475
P-1, 3, 5	2411, 2431, 2443	1400	1650	1000	2325	1650	1125
P-4	2402, 2410, 2414	1575	1850	1150	2625	1850	1300
P-6	2453, 2454, 2458	1800	2075	1300	2975	2075	1475
P-7	2476, 2477	1925	2225	1400	3175	2225	1575
P-8, 10	2461 to 2474, 2478 to 2483	1975	2300	1425	3300	2300	1600
P-8, 10	2475, 2484 to 2491	2100	2425	1525	3475	2425	1700
P-12	3122, 3123	2000	2350	1450	3350	2350	1650
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	1950	2300	1450	3250	2300	1625
C-18	3400 to 3409	1800	2100	1325	2950	2100	1475
C-19	3410 to 3426	1875	2175	1375	3075	2175	1550
TW-3	2937	1200	1375	875	1975	1375	975
TW-8	2914, 2918, 2923	1650	1925	1225	2725	1925	1350
Mk-2, 4	3201 to 3240	2250	2600	1650	3650	2600	1800
Mk-5, 6	3242 to 3277	2500	2875	1800	4050	2875	2000
Mk-7, 8, 9	3300 to 3324	2750	3175	2000	4450	3175	2250
Mk-10	3295	2100	2450	1550	3450	2450	1725
Mk-11	3297, 3298	2025	2350	1500	3325	2350	1675
F-1	3611 to 3652	2850	3350	2100	4650	3350	2350
F-3, 4, 5	3653 to 3769	3300	3800	2450	5400	3800	2700
MM-3	3930	3800	4400	2800	6250	4400	3100
AC-4, 5	4100 to 4125	5150	5975	3825	7000	5975	4250
AC-6 to 12	3800 to 3811, 4126 to 4294	②5250	②6000	②4000	②7000	②6000	②4400
Mt-1, 3, 4, 5	4300 to 4376	2700	3200	1925	4500	3200	2175
Mt-2	4387, 4389	2800	3300	2000	4650	3300	2250
GS-1, 2	700 to 710, 4401 to 4415	2825	3300	2050	4725	3300	2300
GS-3, 4, 5, 6	4416 to 4469	3000	3500	2150	4850	3500	2400
SP-1, 2, 3	5000 to 5048	3875	4475	2875	6325	4475	3175
T&NO DF-4, 9	338 to 357	8450	9725	6400	13600	9725	7025
SSW	801 to 818	2800	3250	2050	4625	3250	2750

②Applies to engs. 4126 to 4294 only.
③Rating Yuma to East Yard 10125.

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

RULES 7-A and 10-G. Yellow signals and unattended red flags and red lights must be placed to the left of track in the direction of movement on No. 1 Track and No. 2 Track between Park Avenue, Tucson, and MP 1000.22 west of Vail.

RULE 10-J. Round yellow speed signs indicate the speed restrictions applying to passenger trains with electro-pneumatic brakes on all cars, and with diesel passenger engine, except will apply to Streamlined GOLDEN STATE and SUNSET LIMITED with or without electro-pneumatic brakes.

Eastward speed sign to left of track at MP 974.80 east of Kino reads 75-70-50; and westward speed sign to left of track at MP 870.87, Shawmut reads 30.

RULE 14(d). As specified below, — — — — o sounds of whistle will be indication that flagman may return from west:

Phoenix Yard-Kendall	Trains on Second Main Track,
Normal Jct.	Trains on Creamery Branch,
Picacho	Trains on Phoenix line.

RULE 14(e). As specified below, — — — — — — sounds of whistle will be indication that flagman may return from east:

Kendall-Phoenix Yard	Trains on Second Main Track,
Tempe	Trains on Creamery Branch,
Tempe Jct.	Trains on Tempe Branch,
McQueen	Trains on Christmas Branch.

RULE 21-C. At Phoenix, Gila and Tucson, incoming engines may display indicators until arrival at roundhouse.

RULE 93. Yard limits within which the provisions of Rule 93 will apply are established at the following points:

West MP		East MP
900.96	Phoenix	908.79
914.23	Tempe	915.39
	" (Creamery Br.)	915.55
920.45	Mesa	922.88
977.97	Picacho	938.16
935.36	" (Gila line)	
981.96	Tucson (No. 2 Track)	989.00
	" (No. 1 Track)	988.09
	" (Nogales Br.)	987.42
854.20	Gila	857.70
917.32	Casa Grande	920.05
986.84	Ray Jct.	988.72
998.80	Hayden Jct.	1004.90
1046.37	Nogales	1049.89

Phoenix Yard: Freight trains arriving or departing must receive proceed signal from yardman, white flag by day, green light by night, before passing 7th St., or 16th St.

Tucson: Trains moving against current of traffic on No. 1 track between end of double track, MP 984.12, Tucson and crossover between main tracks just east of Nogales Branch switch must stop before fouling outbound engine lead switch, and proceed only on signal from yardman, white flag by day, green light by night.

Trains arriving from Nogales Branch may pass Signal 9846 displaying proceed indication without stopping if proceed signal is received, from yardman, white flag by day, green light by night, which will indicate that protection has been provided on No. 1 Track and No. 2 Track.

If Signal 9846 displays stop indication train, after stopping, may proceed as prescribed above.

Engines may move from roundhouse lead to PFE Yard against the current of traffic on No. 1 Track when proceed signal received from yardman, white flag by day, green light by night, which will indicate protection has been provided for the movement.

RULE 99-A. Will apply to passenger trains standing on passenger tracks at Phoenix, and passenger tracks 1, 2 and 3 at Tucson.

RULE 99-C. Will apply as follows:
Christmas Branch between McQueen and Hayden Jct.

RULE 103-A. A flagman must precede all movements over:

Tovrea, Washington St.,
Tempe (Creamery Branch), Mill Ave. and 8th St.,
Tucson, West Congress St.,
" South 4th Ave.,
" South 6th Ave.,
" Simpson St.,
Sahuarita, Nogales Highway,
Nogales, Court and Park Sts.

A flagman must precede all switching movements over Fifth St., Tempe.

RULE 103-B. Back-up hose must be used when shoving freight or passenger cars between North and South yards and/or PFE Yard, Tucson.

Back-up hose must be used on leading car when shoving cars on Government tracks at airport at Higley, and on Eagle-Picher spur at Sahuarita.

RULE 104. Normal position of rigid switches at the end of double track and at junctions, is as follows:

Phoenix	Switch in eastward main track, immediately west of First Avenue, Phoenix, from main track to eastward main track,
Phoenix	West end double track, for westward track,
Kendall	Second main track, for first main track,
Picacho	Phoenix line, for Gila line. Operators will handle switches to and from Phoenix line, also for movements through crossovers, and west switches of north and south sidings,
Tempe	Creamery Br., for Phoenix line,
Normal Jct.	Creamery Br., for Phoenix line,
Tempe Jct.	Tempe Br., for Phoenix line,
Magma	Magma-Arizona RR main track, for back track,
McQueen	Christmas Br., for Phoenix line,
Ray Jct.	KCCRR main track, for yard track,
Hayden Jct.	Christmas line, for KCCRR line,

Derails on main track:

Christmas	250 feet east of west switch,
Nogales	Point derail, facing westward movement, just west of west switch of first yard track north of main track.

RULE 211. Will apply when letter "M" is illuminated in letter type indicator as follows:

On mast	Approaching
MP 980.15	Stockham

RULE 306. The following block signals equipped with triangular plate displaying the letter "P", have included in their control limits some special protective device:

Eastward Signals	Protection	Westward Signals
P-9052	Spring switch, west end passenger lead, Phoenix	
	Spring switch, east end double track, Phoenix Yard	P-9075
P-9376 P-9378	Spring switch, east end south siding, Picacho	P-9377
	Spring switch, east end siding, Ocatilla	P-9411
	Spring switch, east end siding, Wymola	P-9445
P-9506	Spring switch, west end siding, Red Rock	P-9507 P-9505
P-9518 P-9520	Spring switch, east end siding, Red Rock	P-9521
	Spring switch, east end siding, Naviska	P-9587
	Spring switch, east end siding, Rillito	P-9673
P-9776	Spring switch, west end westward siding, Stockham	P-9777 P-9779
P-9702	Spring switch, end double track, Stockham	P-9793
P-8648	Spring switch, west end siding, Bosque	
P-8706	Spring switch, west end siding, Shawmut	P-8705 P-8707
P-8740	Spring switch, west end siding, Estrella	P-8739 P-8741
P-8828	Spring switch, west end siding, Mobile	
P-8970	Spring switch, west end siding, Maricopa	
P-9072	Spring switch, west end siding, Bon	
P-9176	Spring switch, west end siding, Casa Grande	
	Spring switch, east end siding, Casa Grande	P-9191
P-9276	Spring switch, west end siding, Toltec	

RULE 505. AUTOMATIC BLOCK SIGNAL SYSTEM

Phoenix: Main track has no block signal protection between Signal 9061 and end of double track; and double track has no block signal protection from west end to Signal 9064.

Picacho: Upper unit in Signal 9377 governs movement on main track; Middle unit for north siding; Lower unit for south siding. Signal 9374 will require a two-minute interval to clear after switch on north siding is lined for movement to main track if it is desired to make an eastward movement from north siding ahead of eastward train on main track or eastward train occupying approach circuit on south siding.

Red Rock: Westward trains on siding will hold approach signal against opposing train at next station beyond as soon as Approach Circuit sign on siding is passed. If necessary to pass Approach Circuit sign member of crew must, after train stops, immediately operate push button bearing number of signal on main track in order to clear signals for opposing train and avoid delay which would otherwise occur with signal displaying approach indication.

Stockham: Upper unit on Signal 9793 governs movement from eastward track through crossover to single track; lower unit governs movement into westward siding, Stockham.

When Signal 9813 displays stop indication, westward train must stop 500 feet east of DeMoss Petrie Road crossing, and may proceed when signal displays yellow or green aspect; or may proceed after stopping as prescribed by Rule 509(c) provided track can be seen to be clear of trains, cars or engines to Signal 9793. This does not relieve train of compliance with instructions under Rule 705 if letter "W" should also be illuminated with Signal 9813 displaying stop indication.

Tucson: Passenger tracks 1, 2 and 3 between end of double track at MP 983.66 and Signal 9838 on No. 2 Track have no block signal protection.

Westward trains must not pass east crossover switch opposite Signal 9838, just east of Tucson yard office without proceed signal from yardman, white flag by day, green light by night, unless this switch is lined for movement on Passenger track 1.

Trains and engines finding Signal 9843 indicating "Stop" may proceed into passenger tracks 2 or 3 if switches are properly lined and proceed signal from yardman, white flag by day, green light by night is received. Such proceed signal from yardman will authorize trains or engines to pass Signal 9843 without stopping, but must move with caution, not exceeding 12 MPH.

Westward freight trains must receive proceed signal from yardman, white flag by day, green light by night before passing first crossover switch west of Signal 9851.

Eastward freight trains, after passing Sixth Ave. tower and before entering freight yard, must receive proceed signal from yardman, white flag by day, green light by night.

PUSH BUTTONS

Push button and light on side of relay case on Signals P-9114 at Kendall, P-9376 at Picacho; P-9507, and opposite Signal P-9520 at Red Rock; P-9776 at Stockham; P-8707 and P-8716 at Shawmut; P-8741 at Estrella.

RULE 516. Overlap posts:

McQueen	Middle of Siding	Westward trains,
Papago	Middle of Siding	Eastward trains,
Papago	Middle of Siding	Westward trains,
Cortaro	MP 972.00	Westward trains.

RULE 535. SPRING SWITCHES

Spring switches equipped with facing point locks are located as follows:

Location		Normal Position
Picacho	East end south siding	Main track
Ocatilla	East end siding	Main track
Wymola	East end siding	Main track
Red Rock	East end siding	Main track
Red Rock	West end siding	Main track
Naviska	East end siding	Main track
Rillito	East end siding	Main track
Stockham	West end westward siding	Main track
Stockham	End double track	Eastward track
Bosque	West end siding	Main track
Shawmut	West end siding	Main track
Estrella	West end siding	Main track
Mobile	West end siding	Main track
Maricopa	West end siding	Main track
Bon	West end siding	Main track
Casa Grande	West end siding	Main track
Casa Grande	East end siding	Main track
Toltec	West end siding	Main track

Spring switches not equipped with facing point locks are located as follows:

Location		Normal Position
Phoenix	Main track at passenger lead	Passenger lead
Phoenix Yard	East end double track	Westward track

Spring switches are also located on engine leads at Tucson; and on stem of wye at Estrella.

RULE 605. INTERLOCKING

Picacho: Limits extend from eastward SA signals 300 ft. west of station on Phoenix line and 1130 ft. west of station on Gila line to westward SA signals 400 ft. east of station on north siding, and 700 ft. east of station on main track. North and south sidings are in ABS.

One unit dwarf light type signal located 560 ft. east of station on south siding east of crossover to main track may display indication per Rule 281 Fig. G; Rule 285 Fig. G; and Rule 290 Fig. I. This signal normally dark, will display indication for movement over crossover to Phoenix line only.

An eastward train restricted at Picacho, for an opposing train may accept proceed indication in eastward interlocking signal as authority to move on main track to Signal 9376, at fouling point east end south siding.

Tucson, Sixth Ave.: Limits extend from point opposite Signal 9835 on both main tracks, to end of double track, and on passenger track 1 to dwarf signal 7 feet west of west switch of passenger track 2, and on freight lead to dwarf signal 10 feet east of Sixth Ave. tower, and on middle track to dwarf signal 230 feet west of east switch, and on Independent Ice lead to dwarf signal 240 feet west of Sixth Ave. tower.

Signals prescribed by Rule 628 may be given from tower window.

Whistle signals:

Eastward passenger trains approaching tower, — o —,
Eastward freight trains approaching tower, o — o.

RULE 705. LETTER TYPE INDICATORS

Indicators located as follows:

Illuminated Letter	On Signal	Approaching	Authorizes and Requires Movement as Follows:
M	9391	Picacho	Proceed to train-order office.
SS	9391	Picacho	Enter south siding.
NS	9391	Picacho	Enter north siding.
W	9813	DeMoss Petrie crossing	Stop short of stub mast at MP 980.15 until, or unless letter "M" or flashing white light displayed on this mast.
W	9826	Speedway crossing, Tucson	Stop until light in indicator extinguished.

Indicator on post 300 feet east of 22nd St., Nogales Branch, Tucson. When letter W is illuminated westward trains, except freight trains of 15 cars or less, must stop east of 22nd St. When flashing white light is displayed train is authorized to proceed to Park Ave. yard office.

A unit for display of flashing white light located on stub mast at MP 980.15, 3000 feet west of Prince Road crossing, and when displayed will indicate to an approaching train that train orders are ready for delivery, at Stockham, which do not restrict the train at the end of double track or that switch has been lined for the train to enter westward siding at Stockham but train orders then delivered may restrict the train at the fouling point at west end of westward siding, in which event, train dispatcher may O.K. clearance, and operator may deliver train orders without requiring train to stop before entering siding.

GENERAL REGULATIONS

RULE 824. Instructions for setting hand brakes:

Phoenix Yard: Freight trains		Two brakes on west end, Two brakes on east end;
Tucson:	Passenger trains	Two brakes on west end, Two brakes on east end;
	Freight trains	Fifteen brakes on west end, Ten brakes on east end;
PFE Yard: Freight trains		Fifteen brakes on west end, Ten brakes on east end.

At Tucson hand brakes on passenger trains are to be set after engine is spotted for oil. If necessary to detach engine after these hand brakes have been released, employe before detaching engine must see that sufficient hand brakes have again been set.

Hand brakes must be securely set on all cars left at Eagle-Picher plant, Sahuarita. Cars must not be left west of derail.

AIR BRAKE RULES

RULE 17. One retainer for each 60 tons must be turned up from Eagle-Picher plant to Santa Cruz River bridge, on spur from Sahuarita.

FREIGHT TRAINS

RULE 22. Trainmen must not couple air hose on outgoing freight trains at Gila until train is made up and engine and caboose on train, unless train is made up by crew making air test and handling the train from Gila.

Terminal test outlined in this rule, after having been made at originating terminal on through freight trains, will not be made at intermediate terminal Gila, except when cars are added to the consist. Instead, test will be made as outlined in Air Brake Rule 25—Rear end test. Changing crews, caboose, and/or engine, will not necessitate terminal test outlined under Air Brake Rule 22.

RULE 25. After terminal test outlined in Air Brake Rule 22 has been made at originating terminal, rear end test outlined in Air Brake Rule 25 will be made at intermediate terminal Gila on freight trains moving through without cars being added to the consist or on which only crews, caboose, and/or engines, may be changed. Under these conditions, rolling inspection by trainmen will be made on freight trains arriving and leaving the intermediate terminal.

Air brakes must be used, and rear end test made on all movements on Eagle-Picher spur, Sahaurita.

MISCELLANEOUS

1. Casa Grande, Mesa, Amado and Hayden Jct., water for engine purposes is treated and must not be taken for domestic use until treater has been shut off.

Maricopa: Emergency water supply only.

6. Tovrea: Entrance to Cudahy Packing Co. plant is protected by gates, which must be kept closed and locked when not in use. Look out for material alongside tracks around plant.

Coolidge: Gate at entrance to Indian Service spur must be kept closed and locked when not in use.

Rillito: Derail on Arizona Portland Cement spur must be lined before switch to the spur is lined. Cars must not be kicked or dropped into this spur, and cars must not be left standing between derail and 550 feet west of road crossing. Derail must be lined to normal as soon as each movement completed over same. Chains across crusher spur at each end of pit are secured by snaps to posts, and may be unfastened to move cars to or from pit. Chains must be fastened across track when there is no car spotted over pit.

Derail on crusher spur, located 80 feet east of crusher pit, must not be lined for movement into spur until it is known that track over pit is ready for the movement.

PFE Yard: Look out for ice and material alongside PFE tracks.

10. Engines must not use spur at Burns.

Engines listed must not operate on tracks shown below:

Class of Engine		Restricted Tracks
All engines	Rillito	On open pit at Arizona Portland Cement Co. Trainmen must not cross pit, but must go around pit via stairway.
All engines	Sahuarita	Across Eagle-Picher ore bins.

Steam engines, larger than C class, cannot be turned on turntable at Nogales. When necessary to turn engines, larger than C class, turn on wye at Calabasas on eastward trip.

Toltec: Switching must not be performed at M. D. Blunt packing shed when tank car is connected for unloading at Butane plant.

Load limit (car and contents):

Phoenix-Tucson	251,000 pounds
Gila-Picacho	251,000 pounds
McQueen-Christmas	210,000 pounds
Tempe-Normal Jct. via Creamery	210,000 pounds
Tempe Jct.-West Chandler	210,000 pounds
Tucson-Nogales	210,000 pounds

Unless authorized by Superintendent, heavier loads must not be handled.

LOCATION OF OVERHEAD AND SIDE STRUCTURES NOT STANDARD CLEARANCE ON MAIN TRACK AND SIDINGS

Mile Post	Location	Description	
		PHOENIX-TUCSON	
914.00		Salt River bridge	Side
959.30		Gila River bridge	Side
983.90	Tucson	Car repair shed	Side
984.40	Tucson	Base of Signal 9844	Side
		CHRISTMAS BRANCH	
963.96		Rock cut	Side
964.10		Rock cut	Side
965.56		Rock cut	Side
971.30 to 971.77		Rock cuts	Side
972.40		Tunnel No. 1	Side and Overhead
972.50		Gila River bridge	Side
973.00		Rock cut	Side
973.04		Rock cut	Side
973.07		Rock cut	Side
976.00 to 977.00		Rock cuts	Side
980.00 to 982.00		Rock cuts	Side
983.50		Rock cut	Side
985.30		Gila River bridge	Side
985.50		Rock cut	Side
987.80	Ray Jct.	Water tank and spout	Side
988.30		Rock cut	Side
988.50		Tunnel No. 2	Side and Overhead
990.00		Tunnel No. 3	Side and Overhead
992.30		Rock cut	Side
997.40		Rock cut	Side
998.80	Hayden Jct.	Water column	Side
1003.50	Winkleman	Corral track	Side
1006.50		Rock cut	Side
1009.20		Tunnel No. 4	Side and Overhead
		NOGALES BRANCH	
988.30	Tucson	Loading chute	Side

SPEED RESTRICTIONS FOR OTHER THAN MAIN TRACKS

	With Caution Not Exceeding MPH
Through sidings, yard and other tracks, wyes, balloon tracks, crossovers and turnouts, except:	15
Through slip switches	10
Through turnouts on other than sidings	10
On branches	10
Through all sidings, yard tracks and other tracks with engine running backward	10
On yard tracks 1 to 7, inc., PFE yard	6
Through westward siding, Stockham	25
On Government tracks at Higley airport	10
On Government tracks at Higley airport (with engine backing)	5
On sidings on Nogales Branch	8
On Calabasas wye	10
On Eagle-Picher spur, Sahuarita	10
On Eagle-Picher spur, Sahuarita (with engine backing)	5

SPECIAL INSTRUCTIONS—PICACHO SUBDIVISION

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in SPEED RESTRICTIONS FOR ENGINES appearing on page 4, and MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT and OTHER MAXIMUM SPEEDS appearing on page 5 of Special Instructions for All Subdivisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	A	1	2	3	4
EASTWARD, PHOENIX TO PICACHO:					
MP MP					
905.51 to 907.43	20	20	20	20	20
907.43 to 907.45 (spring switch)	15	15	15	15	15
907.45 to 907.91	20	20	20	20	20
907.91 to 908.79	40	40	25	25	25
908.79 to 912.74	60	50	35	35	30
912.74 to 913.77	40	40	25	25	25
★913.77 to 915.31 (Tempe)	20	20	20	20	20
915.31 to 915.79	40	40	25	25	25
915.79 to 920.84	60	50	35	35	30
920.84 to 921.88	40	35	25	25	25
921.88 to 922.04	25	25	20	20	20
922.04 to 928.57	60	50	35	35	30
928.57 to 929.57 (Chandler)	40	40	35	35	30
929.57 to 943.93	79	70	55	50	30
943.93 to 945.49	70	65	55	50	30
945.49 to 946.80	60	55	45	45	30
946.80 to 955.71	79	70	55	50	30
955.71 to 955.85	75	70	55	50	30
955.85 to 958.02	79	70	55	50	30
958.02 to 959.39	65	60	55	50	30
959.39 to 979.32	79	70	55	50	30
979.32 to 979.75 (936.69)	25	25	20	20	20
EASTWARD, PICACHO TO TUCSON:					
936.69 to 936.82	25	25	20	20	20
936.82 to 975.57	79	70	50	50	30
975.57 to 975.96	75	70	50	50	30
975.96 to 981.91	79	70	55	50	30
981.91 to 986.00	20	20	20	20	20
EASTWARD, GILA TO PICACHO:					
854.97 to 856.80	..	30	30	30	30
856.80 to 866.98	..	70	50	40	30
866.98 to 867.85	..	50	35	35	30
867.85 to 870.12	..	30	30	30	30
870.12 to 874.48	..	50	35	35	30
874.48 to 878.00	..	70	50	50	30
878.00 to 936.55	..	70	55	50	30
936.55 to 936.69	..	25	20	20	20
EASTWARD, PHOENIX YARD TO KENDALL ON SECOND MAIN TRACK:					
907.82 to 911.01	..	..	25	25	25
911.01 to 911.38	..	..	20	20	20

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	A	1	2	3	4
WESTWARD, TUCSON TO PICACHO:					
MP MP					
986.00 to 982.73	20	20	20	20	20
982.73 to 981.91	40	40	30	20	20
981.91 to 980.95	79	70	50	50	30
980.95 to 979.30	79	70	55	50	30
979.30 to 979.22 (spring switch)	35	35	35	35	#..
979.22 to 975.96	79	70	55	50	30
975.96 to 975.57	75	70	55	50	30
975.57 to 936.82	79	70	55	50	30
936.82 to 936.69 (979.75)	25	25	20	20	20
WESTWARD, PICACHO TO PHOENIX:					
979.75 to 979.32	25	25	20	20	20
979.32 to 959.39	79	70	55	50	30
959.39 to 958.02	65	60	55	50	30
958.02 to 946.80	79	70	55	50	30
946.80 to 945.49	60	55	45	45	30
945.49 to 943.93	70	65	55	50	30
943.93 to 929.57	79	70	55	50	30
929.57 to 928.57 (Chandler)	40	40	35	35	30
928.57 to 922.04	60	50	35	35	30
922.04 to 921.88	25	25	20	20	20
921.88 to 920.84	40	35	25	25	25
920.84 to 915.79	60	50	35	35	30
915.79 to 915.31	40	40	25	25	25
★915.31 to 913.77 (Tempe)	20	20	20	20	20
913.77 to 912.74	40	40	25	25	25
912.74 to 908.79	60	50	35	35	30
908.79 to 907.91	40	40	25	25	25
907.91 to 907.45	20	20	20	20	20
907.45 to 907.43 (spring switch)	15	15	15	15	15
907.43 to 905.51	20	20	20	20	20
WESTWARD, PICACHO TO GILA:					
936.69 to 936.55	..	25	20	20	20
936.55 to 878.00	..	70	55	50	30
878.00 to 874.48	..	70	50	50	30
874.48 to 870.12	..	50	35	35	30
870.12 to 867.85	..	30	30	30	30
867.85 to 866.98	..	50	35	35	30
866.98 to 856.80	..	70	50	40	30
856.80 to 854.97	..	30	30	30	30
WESTWARD, KENDALL TO PHOENIX YARD ON SECOND MAIN TRACK:					
911.38 to 911.01	..	..	20	20	20
911.01 to 907.82	..	..	25	25	25

★Regulated by City ordinance. #See Rule 536.

*Streamlined passenger trains are those having electro-pheumatic brakes on all cars, and with diesel passenger engine, except Streamlined GOLDEN STATE and SUNSET LIMITED may operate at speeds shown in Column A with or without electro-pneumatic brakes.

Passenger trains with electro-pneumatic brakes on all cars, and with GS-4 to 6 or Mt-4 class engine, may run not to exceed 75 MPH on tangent track where 70 MPH is authorized in Column 1.

Maximum speed provided for passenger trains other than streamlined passenger trains, will apply to No. 370, except that maximum speed of 60 MPH must not be exceeded at any point.

SPECIAL INSTRUCTIONS—PICACHO SUBDIVISION

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in SPEED RESTRICTIONS FOR ENGINES appearing on page 4, and MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT and OTHER MAXIMUM SPEEDS appearing on page 5 of Special Instructions of All Subdivisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	1	2	3	4
EASTWARD, McQUEEN TO CHRISTMAS:				
MP MP				
923.90 to 924.08	25	25	25	20
924.08 to 955.93	30	30	30	20
955.93 to 956.07	25	25	25	20
956.07 to 964.28	30	30	30	20
964.28 to 964.54	20	20	20	20
964.54 to 968.79	30	30	30	20
968.79 to 988.24	15	15	15	15
988.24 to 999.53	25	25	25	20
999.53 to 1000.64 (Hayden Jct.)	15	15	15	15
1000.64 to 1010.88 (Christmas)	10	10	10	10
EASTWARD, TEMPE TO NORMAL JCT., VIA CREAMERY:	20	20	20	20
EASTWARD, TEMPE JCT. TO WEST CHANDLER:	20	20	20	20
EASTWARD, TUCSON TO NOGALES:				
984.04 to 985.81	15	15	15	15
985.81 to 987.42	20	20	20	20
987.42 to 1046.37, except:	*35	25	20	20
★1046.37 to 1049.89 (Nogales)	20	20	20	20

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	1	2	3	4
WESTWARD, CHRISTMAS TO McQUEEN:				
MP MP				
1010.88 to 1000.64 (Hayden Jct.)	10	10	10	10
1000.64 to 999.53	15	15	15	15
999.53 to 988.24	25	25	25	20
988.24 to 968.79	15	15	15	15
968.79 to 964.54	30	30	30	20
964.54 to 964.28	20	20	20	20
964.28 to 956.07	30	30	30	20
956.07 to 955.93	25	25	25	20
955.93 to 924.08	30	30	30	20
924.08 to 923.90 (McQueen)	25	25	25	20
WESTWARD, NORMAL JCT. TO TEMPE, VIA CREAMERY:	20	20	20	20
WESTWARD, WEST CHANDLER TO TEMPE JCT.:	20	20	20	20
WESTWARD, NOGALES TO TUCSON:				
★1049.89 to 1046.37 (Nogales)	20	20	20	20
1046.37 to 987.42, except:	*35	25	20	20
987.42 to 985.81	20	20	20	20
985.81 to 984.04	15	15	15	15

★Regulated by City ordinance.

*Passenger trains with DS-100, 102 to 108, 110 to 112, 114, 115, F-1 or Mk class engine must not exceed speed authorized for freight and mixed trains; and trains with DF-1 to 9, 11, 12 or DS-101, 109, 113 class engines must not exceed 20 MPH from MP 992.10 to MP 1025.40, MP 1028.10 to MP 1040.30 and 1043.10 to 1046.37.

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Maricopa to Tucson Phoenix to Picacho Jct.	Gila to Estrella	Estrella to Maricopa Tucson to Maricopa Estrella to Gila Picacho Jct. to Phoenix Yard	Maricopa to Estrella
DP-3	6017	3750	2300	3750	3750
DP-4, 7	6000 to 6004, 6018	3750	2300	3750	3750
DP-5, 6	6005 to 6016	....	....	....	....
DP-8, 9	6019 to 6027	....	....	....	....
DF-1 to 9, 11, 12	6138 to 6461	9725	6400	13600	9725
DF-100	5200 to 5202				
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	3325	2150	4800	3325
DF-109, 111	5250 to 5252, 5503 to 5505			5000	4875
DF-200 to 204	5100 to 5118	....	....	....	....
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....
DS-1 to 8	1000 to 1032	1025	660	1475	1025
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	1575	1025	2225	1575
DS-110, 114	1442 to 1463, 1492 to 1499	2000	1300	2900	2000
DS-113	1486 to 1491	1925	1300	2700	1925
DS-200, 201	1900 to 1903				
M-4	1617 to 1713	1450	950	2150	1450
M-6, 8	1721 to 1803, 1824, 1825	1800	1125	2500	1800
M-9	1804 to 1817, 1826 to 1830	1900	1200	2650	1900
M-11	1832 to 1835	1975	1250	2750	1975
T-1	2248, 2252	1300	825	1850	1300
T-23	2302 to 2310	1875	1175	2650	1875
T-28, 31	2312 to 2362	2075	1300	2925	2075
T-32	2363 to 2370, 2372 to 2384	2100	1325	2975	2100
T-40	2371	2100	1325	2975	2100
P-1, 3, 5	2411, 2431, 2443	1650	1000	2325	1650
P-4	2402, 2410, 2414	1850	1150	2625	1850
P-6	2453, 2454, 2458	2075	1300	2975	2075
P-7	2476, 2477	2225	1400	3175	2225
P-8, 10	2461 to 2474, 2478 to 2483	2300	1425	3300	2300
P-8, 10	2475, 2484 to 2491	2425	1525	3475	2425
P-12	3122, 3123	2350	1450	3350	2350
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	2300	1450	3250	2300
C-18	3400 to 3409	2100	1325	2950	2100
C-19	3410 to 3426	2175	1375	3075	2175
TW-3	2937	1375	875	1975	1375
TW-8	2914, 2918, 2923	1925	1225	2725	1925
Mk-2, 4	3201 to 3240	2600	1650	3650	2600
Mk-5, 6	3242 to 3277	2875	1800	4050	2875
Mk-7, 8, 9	3300 to 3324	3175	2000	4450	3175
Mk-10	3295	2450	1550	3450	2450
Mk-11	3297, 3298	2350	1500	3325	2350
F-1	3611 to 3652	3350	2100	4650	3350
F-3, 4, 5	3653 to 3769	3800	2450	5400	3800
MM-3	3930	4400	2800	6250	4400
AC-4, 5	4100 to 4125	5975	3825	7000	5975
AC-6 to 12	3800 to 3811, 4126 to 4294	②6000	②4000	②7000	②6000
Mt-1, 3, 4, 5	4300 to 4376	3200	1925	4500	3200
Mt-2	4387, 4389	3300	2000	4650	3300
GS-1, 2	700 to 710, 4401 to 4415	3300	2050	4725	3300
GS-3, 4, 5, 6	4416 to 4469	3500	2150	4850	3500
SP-1, 2, 3	5000 to 5048	4475	2875	6325	4475
T&NO DF-4, 9	338 to 357	9725	6400	13600	9725
SSW	801 to 818	3250	2050	4625	3250

②Applies to engs. 4126 to 4294 only.

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

SPECIAL INSTRUCTIONS—PICACHO SUBDIVISION

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	McQueen to Christmas	Christmas to McQueen	Tucson to Calabasas	Calabasas to Nogales	Nogales to Tucson
DF-1 to 9, 11, 12	6138 to 6461	....	....	8700	6400	24225
DF-100	5200 to 5202			....		....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	3600	4325	3900	2175	5000
DF-1 to 9	6138 to 6439	....	....	....	....	....
DF-200 to 204	5100 to 5118	....	....	....	....	....
DF-300, 301	4600 to 4603, 4700 to 4703					....
DS-1 to 8	1000 to 1032	1375	1650	1125	825	4000
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	2125	2550	1750	1275	4000
DS-110, 114	1442 to 1463, 1492 to 1499	2175	2600	1800	1300	4000
DS-113	1486 to 1491	2075	2450	1725	1250	4000
DS-200, 201	1900 to 1903			....		....
M-4	1617 to 1713	1575	1875	1050	975	1700
M-6, 8	1721 to 1803, 1824, 1825	1900	2275	1250	1150	2000
M-9	1804 to 1817, 1826 to 1830	2050	2450	1325	1225	2100
M-11	1832 to 1835	2125	2550	1375	1275	2200
T-1	2248, 2252	1375	1650	900	825	1450
T-23	2302 to 2310	2000	2375	1300	1200	2100
T-28, 31	2312 to 2362		....	1825	1325	2300
T-32	2363 to 2370, 2372 to 2384			1825	1300	2300
T-40	2371	....	....	....	....	....
P-1, 3, 5	2411, 2431, 2443	....	....	....	....	....
P-4	2402, 2410, 2414	....	....	....	....	....
P-6	2453, 2454, 2458	....	....	....	....	....
P-7	2476, 2477	....	....	....	....	....
P-8, 10	2461 to 2474, 2478 to 2483	....	....	....	....	....
P-8, 10	2475, 2484 to 2491	....	....	....	....	....
P-12	3122, 3123	....	....	....	....	....
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	2350	2800	1875	1500	2550
C-18	3400 to 3409	2225	2650	1475	1350	2325
C-19	3410 to 3426	2325	2775	1525	1400	2425
TW-3	2937	1475	1775	1150	1025	1575
TW-8	2914, 2918, 2923	2025	2425	1325	1225	2150
Mk-2, 4	3201 to 3240	①2825	①3375	2150	1650	2950
Mk-5, 6	3242 to 3277	②3050	②3650	2300	1850	3250
Mk-7, 8, 9	3300 to 3324	....	....	....	....	....
Mk-10	3295	....	....	....	....	....
Mk-11	3297, 3298	....	....	....	....	....
F-1	3611 to 3652			2300	2125	3675
F-3, 4, 5	3653 to 3769	....	....	....	....	....
MM-3	3930	....	....	....	....	....
AC-4, 5	4100 to 4125	....	....	....	....	....
AC-6 to 12	3800 to 3811, 4126 to 4294	....	....	....	....	....
T&NO DF-4, 9	338 to 357	....	....	8700	6400	24225

①Applies to Engines 3201, 3203 to 3206, 3224, 3227, 3229, 3236 and 3237 only.

②Applies to Engines 3247, 3251, 3253, 3255, 3259, 3266 and 3272 only.

①②Rating also applies to other Mk-2, 4, 5, 6 class engines between Ray Jct. and Hayden Jct., but such engines may be moved between McQueen and Ray Jct. only for shop work or exchange.

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

RULES 7-A and 10-G. Yellow signals and unattended red flags and red lights must be placed to the left of track in the direction of movement on No. 1 Track and No. 2 Track between Park Avenue, Tucson, and MP 1000.22 west of Vail.

RULE 10-J. Round yellow speed signs indicate the speed restrictions applying to passenger trains with electro-pneumatic brakes on all cars, and with diesel passenger engine, except will apply to Streamlined GOLDEN STATE and SUNSET LIMITED with or without electro-pneumatic brakes.

RULE 14(e). As specified below, — — — — — — sounds of whistle will be indication that flagman may return from east:

Mescal, Trains on Mescal Subdivision of Rio Grande Division.
Bowie, Trains on Globe Branch.

RULE 93. Yard limits within which the provisions of Rule 93 will apply are established at the following points:

West MP		East MP
981.96	Tucson (No. 2 Track)	989.00
	“ (No. 1 Track)	988.09
	“ (Nogales Br.)	987.42
1021.24	Mescal (Marsh-Fairbank line)	1023.13
1022.89	“ (Pantano-Benson line)	1024.13
1031.60	Benson	1034.01
	“ (Benson-Fairbank Br.)	1034.00
1097.10	Bowie	1100.00
	“ (Globe Br.)	1099.50
1136.65	Safford	1138.34
1218.70	Globe	1223.22
1229.82	Miami	1232.98
1147.19	Lordsburg	1151.38

Tucson: Trains moving against current of traffic on No. 1 Track between end of double track, MP 984.12, Tucson and crossover between main tracks just east of Nogales Branch switch must stop before fouling outbound engine lead switch, and proceed only on signal from yardman, white flag by day, green light by night.

Trains arriving from Nogales Branch may pass Signal 9846 displaying proceed indication without stopping if proceed signal is received, from yardman, white flag by day, green light by night, which will indicate that protection has been provided on No. 1 Track and No. 2 Track.

If Signal 9846 displays stop indication train, after stopping, may proceed as prescribed above.

Engines may move from roundhouse lead to PFE Yard against the current of traffic on No. 1 Track when proceed signal received from yardman, white flag by day, green light by night, which will indicate protection has been provided for the movement.

Westward trains entering PFE Yard must not pass east switch of crossover in vicinity of Scale house unless proceed signal received from yardman.

RULE 99-A. Will apply to passenger trains standing on passenger tracks 1, 2 and 3 at Tucson.

RULE 99-C. Will apply as follows:
Globe Branch between Bowie and Globe.

RULE 103-A. A flagman must precede all movements over:

Globe, Hackney St. and eastward over Murphy St., Miami, Latham Blvd., Adonis Ave. and Miami Copper Co. highway crossing.

RULE 103-B. Back-up hose must be used when shoving with freight or passenger cars, between north and south yards Tucson and/or PFE Yard.

Back-up hose must be used on leading car when shoving cars on Government tracks at Airport at Wilmot.

RULE 104. Normal position of rigid switches at the end of double track and at junctions, is as follows:

Tucson	Nogales Branch wye, for No. 1 Track,
Benson	Benson-Fairbank Branch, for track 2.
Bowie	Globe Branch, for siding,

RULE 306. The following block signals equipped with triangular plate displaying the letter “P”, have included in their control limits some special protective device:

Eastward Signals	Protection	Westward Signals
	Spring switch, west end westward siding, Wilmot	P-9941 P-9943
P-9954 P-9956	Spring switch, east end eastward siding, Wilmot	
P-10126 P-10128	Spring switch, east end siding, Pantano	P-10129
	Spring switch, east end siding, Chamiso	P-10287
P-10320	Spring switch, west end siding, Benson	
P-10356	Spring switch, west end siding, Fenner	
P-10366 P-10368	Spring switch, east end siding, Fenner	P-10369
P-10436	Spring switch, west end siding, Tully	
	Spring switch, east end siding, Tully	P-10453
P-10526	Spring switch, west end siding, Dragoon	P-10527 P-10525
P-10736	Spring switch, west end siding, Willcox	
P-10906	Collision detector, Luzena underpass, MP 1091.04	P-10915
P-10906	Spring switch, west end siding, Luzena	P-10907 P-10909
P-10974	Spring switch, west end siding, Bowie	
P-11058	Spring switch west end siding, Olga	P-11057 P-11059
P-11068 P-11070	Spring switch, east end siding, Olga	P-11071
P-11130	Spring switch, west end siding, San Simon	
P-11216	Spring switch, west end siding, Vanar	P-11215 P-11217
P-11226 P-11228	Spring switch, east end siding, Vanar	P-11229
P-11284	Spring switch, west end siding, Steins	P-11283 P-11285
P-11294 P-11296	Spring switch, east end siding, Steins	P-11295
P-11322	Spring switch, west end siding, Mondel	
P-11406	Spring switch, west end siding, Gary	

SPECIAL INSTRUCTIONS—BOWIE SUBDIVISION

RULE 505. AUTOMATIC BLOCK SIGNAL SYSTEM

Tucson: Passenger tracks 1, 2 and 3 between end of double track at MP 983.66 and Signal 9838 on No. 2 Track have no block signal control.

Westward trains must not pass east crossover switch opposite Signal 9838, just east of Tucson yard office without proceed signal from yardman, white flag by day, green light by night, unless this switch is lined for movement on passenger track 1.

Trains and engines finding Signal 9843 indicating "Stop" may proceed into passenger tracks 2 or 3 if switches are properly lined and proceed signal from yardman, white flag by day, green light by night is received, but must move with caution, not exceeding 12 MPH.

Westward freight trains must receive proceed signal from yardman, white flag by day, green light by night before passing first crossover switch west of Signal 9851.

Tucson-Mescal: Eastward trains on No. 2 Track finding a signal indicating "Stop" will apply Rule 509(c). Westward trains moving against current of traffic on No. 2 Track finding a signal indicating "Stop" between Mescal and Vail will apply Rule 510; and will have no block signal protection between MP 998.80 west of Vail and Tucson. Between Park Ave., Tucson, and PFE Yard, automatic signals are on the left of the track in current of traffic direction.

Westward trains on No. 1 Track between Mescal and Tucson finding a signal indicating "stop" will apply Rule 509 (c). Eastward trains on No. 1 Track will have no block signal protection between Tucson and Signal 10078; and eastward trains on No. 1 Track between Signal 10078 and Mescal finding a signal indicating "stop" will apply Rule 509 (a), 509 (b), or 510.

Westward freight trains must receive proceed signal from yardman, white flag by day, green light by night, at first crossover switch west of Signal 9851.

PUSH BUTTONS

Push buttons and lights on side of relay case on signal post at signal bridges east and west end of sidings Wilmot; and on Signals P-10128 at Pantano; P-10368 at Fenner; and P-10527 and P-10536 at Dragoon; P-10907 at Luzena; P-11059 and P-11070 at Olga; P-11217, P-11228 at Vanar; P-11285 and P-11294 at Steins.

RULE 535. SPRING SWITCHES

Spring switches equipped with facing point locks are located as follows:

Location		Normal Position
Wilmot	East end eastward siding	Main track
Wilmot	West end westward siding	Main track
Chamiso	East end siding	Main track
Benson	West end siding	Main track
Fenner	West end siding	Main track
Fenner	East end siding	Main track
Tully	West end siding	Main track
Tully	East end siding	Main track
Dragoon	West end siding	Main track
Willcox	West end siding	Main track
Luzena	West end siding	Main track
Bowie	West end siding	Main track
Olga	West end siding	Main track
Olga	East end siding	Main track
San Simon	West end siding	Main track
Vanar	West end siding	Main track
Vanar	East end siding	Main track
Steins	West end siding	Main track
Steins	East end siding	Main track
Mondel	West end siding	Main track
Gary	West end siding	Main track

Spring switches not equipped with facing point locks are located as follows:

Location		Normal Position
Pantano	East end siding	No. 2 Track

Wilmot: Spring switches at east end eastward siding and west end of westward siding equipped with switch-point indicators. Rule D-539 will apply.

Pantano: Facing point movement over spring switch east end siding must not exceed 20 MPH.

RULE 605. INTERLOCKING

Tucson, Sixth Ave.: Limits extend from point opposite Signal 9835 on both main tracks, to end of double track, and on passenger track 1 to dwarf signal 7 feet west of west switch of passenger track 2, and on freight lead to dwarf signal 10 feet east of Sixth Ave. tower, and on middle track to dwarf signal 230 feet west of east switch, and on Independent Ice lead to dwarf signal 240 feet west of Sixth Ave. tower.

Signals prescribed by Rule 628 may be given from tower window.

East end PFE Yard: Limits extend on No. 1 Track between signals located 410 feet west and 510 feet east of switch to PFE Yard at MP 987.54 and on PFE Yard leads 1 and 2 to dwarf signals 410 feet west of this switch. Telephones located at signals to contact signal operator.

Signal operator located in Tucson train-order office. Transmitter to announce approach of trains for signal operator located on post at MP 990.40. Whistle signal must be sounded at MP 990.52 as follows:

For main track, — o —,
For PFE yard track, o — o.

Mescal: Interlocking signals may display indication in the upper quadrant. Signal arm extending upward parallel to signal mast indicates "proceed".

Limits are between home signals at east switch of east crossover and west switch of west crossover on Marsh-Fairbank line, and home signals at east and west ends of north and south sidings on Pantano-Benson line. Switches are under control of signal operator, except switches leading from north siding to outfit spur; from south siding to both legs of wye, and to west end of coal track. Switch and derail east end coal track (derail is equipped with electric lock) are hand-thrown, but must not be used until permission is secured from signal operator. North and south sidings have no signal control between fouling points.

Where hand signals, as prescribed by Rule 628, cannot be seen, trains stopped will call the signal operator and secure permission to proceed; also to throw switches by hand in event the remote control appliance is inoperative.

Westward interlocking dwarf signal on east crossover from Marsh-Fairbank line to No. 2 Track at Mescal will display yellow aspect when serving as an approach indication for next home signal on No. 2 Track; or as a caution signal for diverging route when switch is lined for south siding. When so displayed, movement must be made with caution until fouling point at east end of south siding has been passed.

Whistle signals:

Eastward trains to Tucson Division, o o — o o,
Eastward trains to Rio Grande Division, — o o o o,
Eastward trains to south siding, o — o,
Eastward trains south siding to Tucson Division, o o — o
Eastward trains south siding to Rio Grande Division, o — o o,
Westward trains north siding to No. 1 Track, — — o o,
Westward trains Tucson Division to No. 1 Track,o — —,
Westward trains Tucson Division to north siding, o o — —,
Westward trains Rio Grande Division to No. 1 Track, — o —,
Westward trains from Rio Grande Division through east crossover and Tucson Division to No. 1 Track, o — — o.

RULE 705. LETTER TYPE INDICATORS

Indicators located as follows:

Illuminated Letter	On Signal	Approaching	Authorizes and Requires Movement as Follows
M	9977	Wilmot	Proceed to PFE Yard.
M	10012	Vail	Proceed to Pantano.
M	10104	Pantano	Proceed to Mescal.
M	P-10126	East end of siding, Pantano	Proceed to Mescal.
M	11470	Lordsburg	Proceed to train-order office.
S	11470	Lordsburg	Call yard office for instructions.

When indicator on Signal 11470 is not illuminated, trains other than first-class must stop at Signal 11480 and call yard office for instructions.

GENERAL REGULATIONS

RULE 824. Instructions for setting hand brakes:

Tucson: Passenger trains...Two brakes on west end,
Two brakes on east end;
Freight trains.....Fifteen brakes on west end,
Ten brakes on east end.

PFE yard:
Freight trains....{Fifteen brakes on west end,
Ten brakes on east end.

At Tucson hand brakes on passenger trains are to be set after engine is spotted for oil. If necessary to detach engine after these hand brakes have been released, employe before detaching engine must see that sufficient hand brakes have again been set.

RULE 825. Portable rail skids are hung on posts at lower end of sidings at:

Chamiso, Fenner, Sibyl.

When necessary to leave cars on any of these sidings permission must first be obtained from chief train dispatcher, after which rail skid must be placed on rail and leading wheel of first car in descending direction run onto the rail skid, and hand brakes set if brakes are operative, before engine is detached. Trains picking up cars from these sidings must remove rail skid and return it to proper post and lock it in place with switch lock.

RULE 827. Freight trains using retainers on descending grade will stop at Cutter 10 minutes for heat radiation, at which time train inspection will be made.

AIR BRAKE RULES

RULE 17. Retainers will be used on grades of 1.4% to 1.5% on freight trains of less than 55 tons per operative brake when necessary in the judgment of conductor and engineer.

On freight trains averaging 55 tons and over on grades of 1.4% to 1.5% and on all freight trains on grades of 1.5% and over, retainers will be used as follows:

Mescal to Benson	1.4%	grade, One Retainer for each	75 tons
Steins to Mondel	1.4%	“ “ “ “ “	75 tons
Steins to MP 1117.6	1.4%	“ “ “ “ “	75 tons
Sibyl to Benson	1.4%	“ “ “ “ “	75 tons
Pinal to Globe	2%	“ “ “ “ “	60 tons
Globe to Burch	2%	“ “ “ “ “	60 tons
MP 1232.98 to Miami	3%	“ “ “ “ “	50 tons
Miami to Burch	1.4%	“ “ “ “ “	75 tons
Pinal to Cutter	2.2%	“ “ “ “ “	60 tons

When retainers are used, stops will be made for inspection and to permit heat radiation, as follows:

Eastward: Chamiso.
Westward: Fenner.
Vanar.

FREIGHT TRAINS

RULE 33. The tonnage per operative brake Pinal to Burch, and Pinal to Cutter, must not exceed 60 tons.

TRAIN HANDLING

RULE 60. On freight trains handled by diesel engine and using dynamic brakes, before entering siding, turnout, or crossover, on descending grades between Pantano and Steins, and Cutter and Miami, dynamic braking force must be reduced to one-half of the maximum and automatic brake applied sufficiently so that speed will not exceed 15 MPH while engine is moving between points 500 ft. before reaching and 1500 ft. after passing the turnout or crossover.

MISCELLANEOUS

1. At San Simon, water for engine purposes is treated and must not be taken for domestic use until treater is shut off.

Pantano is emergency water supply only. If necessary to take water, take only enough to reach next water supply.

10. PFE Yard, look out for ice and material alongside PFE tracks.

Willcox, look out for bedding sand between tracks 2 and 3.

Load limit (car and contents):

Tucson-Lordsburg....251,000 pounds
Bowie-Miami....210,000 pounds

Unless authorized by Superintendent, heavier loads must not be handled.

11. No. 1 Track and No. 2 Track Bowie subdivision will be operated under double track rules, No. 1 Track westward track and No. 2 Track eastward track.

Limits of double track operation between Tucson and Mescal will be as follows:

Eastward—via No. 2 Track to west interlocking limit at Mescal.

Westward—via No. 1 Track from west interlocking limit at Mescal to Tucson.

Bowie, track 5 in west yard must be kept clear for through movement.

LOCATION OF OVERHEAD AND SIDE STRUCTURES NOT STANDARD CLEARANCE ON MAIN TRACK AND SIDINGS

Mile Post	Location		Description
983.9	Tucson	Car Repair shed	Side
984.4	Tucson	Base of Signal 9844	Side
1008.1		Cienega Creek bridge	Side
1008.2		Rock cut	Side
1008.3		Rock cut	Side
1023.9	Mescal	Overhead crossing	Overhead
1032.5	Benson	Water column	Side
1032.5	Benson	San Pedro River bridge	Side
1098.4	Bowie	Water column	Side
1201.1	San Carlos	Water tank spout	Side and Overhead

SPECIAL INSTRUCTIONS—BOWIE SUBDIVISION

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in SPEED RESTRICTIONS FOR ENGINES appearing on page 4, and MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT and OTHER MAXIMUM SPEEDS appearing on page 5 of Special Instructions for All Subdivisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	 RUNNING BACKWARD
Column:	A	1	2	3	4
EASTWARD, TUCSON TO LORDSBURG:					
MP MP					
982.73 to 986.00	20	20	20	20	20
986.00 to 987.92	65	65	40	40	30
987.92 to 990.25	55	50	35	35	25
990.25 to 1003.88	65	65	40	40	30
1003.88 to 1010.36	30	30	25	25	25
1010.36 to 1012.62	50	50	35	35	30
1012.62 to 1014.00	30	30	25	25	25
1014.00 to 1016.77	50	50	35	35	30
1016.77 to 1018.08	30	30	25	25	25
1018.08 to 1021.63	45	40	30	30	30
1021.63 to 1026.00, except:	50	50	35	35	30
Mescal, thru crossovers to Fairbank line	20	20	20	20	20
1026.00 to 1030.86	..	65	40	40	30
1030.86 to 1032.17 (Benson)	..	40	30	30	30
1032.17 to 1033.48	..	30	30	30	30
1033.48 to 1036.96	..	50	35	35	30
1036.96 to 1040.78	..	30	25	25	25
1040.78 to 1046.97	..	45	30	30	30
1046.97 to 1052.36	..	40	30	30	30
1052.36 to 1058.00	..	50	35	35	30
1058.00 to 1074.27	..	70	50	50	30
★1074.27 to 1075.28 (Willcox)	..	30	30	30	30
1075.28 to 1100.00	..	65	50	50	30
1100.00 to 1116.00	..	65	55	50	30
1116.00 to 1121.00	..	65	50	50	30
1121.00 to 1124.44	..	50	35	35	30
1124.44 to 1128.68	..	30	25	25	25
1128.68 to 1147.60	..	70	50	50	30
1147.60 to 1148.30 (Lordsburg)	..	30	30	30	30

TERRITORY	*Streamlined PASSENGER TRAINS	OTHER PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	 RUNNING BACKWARD
Column:	A	1	2	3	4
WESTWARD, LORDSBURG TO TUCSON:					
MP MP					
1148.30 to 1147.60	..	30	30	30	30
1147.60 to 1128.68	..	70	50	50	30
1128.68 to 1124.44	..	30	25	25	25
1124.44 to 1121.00	..	50	35	35	30
1121.00 to 1116.00	..	65	50	50	30
1116.00 to 1100.00	..	65	55	50	30
1100.00 to 1075.28	..	65	50	50	30
★1075.28 to 1074.27 (Willcox)	..	30	30	30	30
1074.27 to 1058.00	..	70	50	50	30
1058.00 to 1052.36	..	50	35	35	30
1052.36 to 1046.97	..	40	30	30	30
1046.97 to 1040.78	..	45	30	30	30
1040.78 to 1036.96	..	30	25	25	25
1036.96 to 1033.48	..	50	35	35	30
1033.48 to 1032.17 (Benson)	..	30	30	30	30
1032.17 to 1030.86	..	40	30	30	30
1030.86 to 1026.00	..	65	40	40	30
1026.00 to 1023.05 (1021.29)	..	50	35	35	30
Mescal, thru crossover	..	25	25	25	25
1021.29 to 1008.40	70	65	50	50	30
1008.40 to 1007.45	65	60	50	50	30
1007.45 to 990.30	79	70	50	50	30
990.30 to 986.00	55	50	35	35	30
986.00 to 982.73	20	20	20	20	20

★Regulated by City ordinance.

*Streamlined passenger trains are those having electro-pneumatic brakes on all cars, and with diesel passenger engine, except Streamlined GOLDEN STATE and SUNSET LIMITED may operate at speeds shown in Column A with or without electro-pneumatic brakes.

Passenger trains with electro-pneumatic brakes on all cars, and with GS-4 to 6 or Mt-4 class engine, may run not to exceed 75 MPH on tangent track where 70 MPH is authorized in Column 1.

SPECIAL INSTRUCTIONS—BOWIE SUBDIVISION

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in SPEED RESTRICTIONS FOR ENGINES appearing on page 4, and MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT and OTHER MAXIMUM SPEEDS appearing on page 5 of Special Instructions for All Subdivisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

All trains must run carefully during and after heavy storms, particularly when the track is apt to be affected. When fog, storms or other conditions obscure track or signals, speed of trains must be so reduced as to permit strict observance of signals and INSURE SAFETY, REGARDLESS OF TIME.

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	1	2	3	4
EASTWARD, BOWIE TO MIAMI:				
MP MP				
1098.12 to 1099.50	15	15	15	15
1099.50 to 1126.12	①35	30	30	20
1126.12 to 1126.43	30	30	30	20
1126.43 to 1136.65	①35	30	30	20
1136.65 to 1138.34 (Safford)	15	15	15	15
1138.34 to 1145.33	①35	30	30	20
★1145.33 to 1146.42 (Pima)	25	25	25	20
1146.42 to 1178.03	①35	30	30	20
1178.03 to 1178.17	30	25	25	20
1178.17 to 1183.70	①35	30	30	20
1183.70 to 1195.00	30	20	20	20
1195.00 to 1207.01	30	25	25	20
1207.01 to 1217.52	①35	30	30	20
1217.52 to 1220.59	20	20	20	15
1220.59 to 1221.08	15	15	15	15
1221.08 to 1221.10 (Broad St., Globe)	6	6	6	6
1221.10 to 1232.98	15	15	15	15

TERRITORY	PASSENGER TRAINS	FREIGHT AND MIXED	LIGHT ENGINES RUNNING FORWARD	LIGHT ENGINES RUNNING BACKWARD
Column:	1	2	3	4
WESTWARD, MIAMI TO BOWIE:				
MP MP				
1232.98 to 1221.10	15	15	15	15
1221.10 to 1221.08 (Broad St., Globe)	6	6	6	6
1221.08 to 1220.59	15	15	15	15
1220.59 to 1217.52	20	20	20	15
1217.52 to 1207.01	①35	30	30	20
1207.01 to 1195.00	30	25	25	20
1195.00 to 1183.70	30	20	20	20
1183.70 to 1178.17	①35	30	30	20
1178.17 to 1178.03	30	25	25	20
1178.03 to 1146.42	①35	30	30	20
★1146.42 to 1145.33 (Pima)	25	25	25	20
1145.33 to 1138.34	①35	30	30	20
1138.34 to 1136.65 (Safford)	15	15	15	15
1136.65 to 1126.43	①35	30	30	20
1126.43 to 1126.12	30	30	30	20
1126.12 to 1099.50	①35	30	30	20
1099.50 to 1098.12	15	15	15	15

★Regulated by City ordinance.

① { **DS-102, 103, 104, 105, Engines 1320-1392, 1426-1441 must not exceed 30 MPH.**
DS-101, 109, Engines 1310-1319, 1403-1425 must not exceed 25 MPH.

SPEED RESTRICTIONS FOR OTHER THAN MAIN TRACKS	With Caution Not Exceeding MPH
Through sidings, yard and other tracks, wyes, balloon tracks, crossovers and turnouts, except:	15
Through slip switches	10
Through turnouts on other than sidings	10
On branches	10
Through all sidings, yard tracks and other tracks with engine running backward	10
On PFE yard tracks 1 to 7, inc., Tucson	6
On Government tracks at Wilmot airport	10
On Government tracks at Wilmot airport (with engine backing)	5

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Tucson to Mescal (No. 2 Track)	Benson to Dragoon San Simon to Steins	Mescal to Benson Dragoon to Willcox Raso to San Simon Steins to MP 1136.5 MP 1143.9 to Lordsburg	Willcox to Raso MP 1136.5 to MP 1143.9	Lordsburg to MP 1143.9
DP-3	6017	2025	1800	3750	3450	3750
DP-4, 7	6000 to 6004, 6018	2025	1800	3750	3450	3750
DP-5, 6	6005 to 6016	....	....	....	....	....
DP-8, 9	6019 to 6027	....	....	....	....	....
DF-1 to 9, 11, 12	6138 to 6461	7700	①5250	24225	8025	8875
DF-100	5200 to 5202	....	....	....	....	....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	2075	1500	5000	2725	3025
DF-109, 111	5250 to 5252, 5503 to 5505	....	....	....	....	4450
DF-200 to 204	5100 to 5118	825	....	3000	....	....
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....	....
DS-1 to 8	1000 to 1032	645	450	4000	850	950
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	975	695	4000	1275	1425
DS-110, 114	1442 to 1463, 1491 to 1499	1250	975	4000	1775	1975
DS-113	1486 to 1491	1225	850	4000	1575	1750
DS-200, 201	1900 to 1903	....	....	....	....	....
M-4	1617 to 1713	800	625	2500	1225	1375
M-6, 8	1721 to 1803, 1824, 1825	975	750	3000	1450	1625
M-9	1804 to 1817, 1826 to 1830	1025	800	3000	1550	1725
M-11	1832 to 1835	1075	825	3000	1600	1775
T-1	2248, 2252	700	525	2500	1050	1175
T-23	2302 to 2310	1000	775	3000	1525	1700
T-28, 31	2312 to 2362	1125	875	4000	1675	1875
T-32	2363 to 2370, 2372 to 2384	1150	900	4000	1725	1900
T-40	2371	1150	900	4000	1725	1900
P-1, 3, 5	2411, 2431, 2443	900	675	3000	1350	1525
P-4	2402, 2410, 2414	975	750	3000	1500	1675
P-6	2453, 2454, 2458	1125	875	4000	1700	1900
P-7	2476, 2477	1200	925	4000	1800	2025
P-8, 10	2461 to 2474, 2478 to 2483	1225	950	4000	1875	2075
P-8, 10	2475, 2484 to 2491	1300	1000	4000	1975	2200
P-12	3122, 3123	1300	1000	4000	1950	2175
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	1250	975	4000	1875	2075
C-18	3400 to 3409	1150	900	4000	1700	1900
C-19	3410 to 3426	1200	925	4000	1775	1975
TW-3	2937	750	575	3500	1125	1250
TW-8	2914, 2918, 2923	1050	800	3500	1575	1750
Mk-2, 4	3201 to 3240	1400	1100	4000	2125	2375
Mk-5, 6	3242 to 3277	1575	1225	4000	2350	2625
Mk-7, 8, 9	3300 to 3324	1750	1375	4000	2600	2900
Mk-10	3295	1325	1050	4000	2000	2225
Mk-11	3297, 3298	1275	1000	4000	1925	2125
F-1	3611 to 3652	1850	1450	5000	2750	3050
F-3, 4, 5	3653 to 3769	2375	1675	5000	3150	3500
MM-3	3930	2450	1925	5000	3650	4050
AC-4, 5	4100 to 4125	3275	2575	7000	4900	5425
AC-6 to 12	3800 to 3811, 4126 to 4294	②3700	②2750	②7000	②5200	②5750
Mt-1, 3, 4, 5	4300 to 4376	1900	1475	5000	2825	3150
Mt-2	4387, 4389	1775	1400	5000	2675	2975
GS-1, 2	700 to 710, 4401 to 4415	1925	1490	5000	2925	3250
GS-3, 4, 5, 6	4416 to 4469	1950	1500	5000	3000	3350
SP-1, 2, 3	5000 to 5048	2800	1975	5000	3675	4075
T&NO DF-4, 9	338 to 357	7700	①5250	24225	8025	8875
SSW	801 to 818	2000	1375	5000	2650	2950

①Rating Benson to Dragoon—5300.
②Applies to engs. 4126 to 4294 only.

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

SPECIAL INSTRUCTIONS—BOWIE SUBDIVISION

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	MP 1143.9 to Mondel Steins to San Simon Raso to 2 M E Cochise Dragoon to Benson Mescal to Tucson (No. 1 Track)	San Simon to Bowie	Bowie to Raso 2 M E Cochise to Dragoon	Mondel to Steins Benson to Mescal
DP-3	6017	3750	3750	2250	1925
DP-4, 7	6000 to 6004, 6018	3750	3750	2250	1925
DP-5, 6	6005 to 6016	....	....	....	....
DP-8, 9	6019 to 6027	....	....	....	....
DF-1 to 9, 11, 12	6138 to 6461	2425	9925	6275	5325
DF-100	5200 to 5202	....	....	....	....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	5000	3400	2100	1550
DF-109, 111	5250 to 5252, 5503 to 5505	5000	5000	3075	①2275
DF-200 to 204	5100 to 5118	3000	....	....	625
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....
DS-1 to 8	1000 to 1032	4000	1050	650	470
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	4000	1600	1000	725
DS-110, 114	1442 to 1463, 1492 to 1499	4000	2225	1275	1000
DS-113	1486 to 1491	4000	1950	1225	900
DS-200, 201	1900 to 1903	....	....	....	....
M-4	1617 to 1713	2500	1550	950	625
M-6, 8	1721 to 1803, 1824, 1825	3000	1825	1125	750
M-9	1804 to 1817, 1826 to 1830	3000	1925	1175	800
M-11	1832 to 1835	3000	2000	1225	825
T-1	2248, 2252	2500	1325	800	525
T-23	2302 to 2310	3000	1900	1150	775
T-28, 31	2312 to 2362	4000	2100	1300	875
T-32	2363 to 2370, 2372 to 2384	4000	2150	1300	900
T-40	2371	4000	2150	1300	900
P-1, 3, 5	2411, 2431, 2443	3000	1700	1025	675
P-4	2402, 2410, 2414	3000	1875	1125	750
P-6	2453, 2454, 2458	4000	2125	1300	875
P-7	2476, 2477	4000	2250	1375	925
P-8, 10	2461 to 2474, 2478 to 2483	4000	2350	1425	950
P-8, 10	2475, 2484 to 2491	4000	2475	1500	1000
P-12	3122, 3123	4000	2450	1500	1000
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	4000	2325	1450	975
C-18	3400 to 3409	4000	2125	1325	900
C-19	3410 to 3426	4000	2225	1375	925
TW-3	2937	3500	1425	875	575
TW-8	2914, 2918, 2923	3500	1950	1200	800
Mk-2, 4	3201 to 3240	4000	2650	1625	1100
Mk-5, 6	3242 to 3277	4000	2925	1825	1225
Mk-7, 8, 9	3300 to 3324	4000	3250	2000	1375
Mk-10	3295	4000	2500	1525	1050
Mk-11	3297, 3298	4000	2375	1475	1000
F-1	3611 to 3652	5000	3425	2125	1450
F-3, 4, 5	3653 to 3769	5000	3900	2425	1750
MM-3	3930	5000	4500	2800	1925
AC-4, 5	4100 to 4125	7000	6075	3775	2575
AC-6 to 12	3800 to 3811, 4126 to 4294	②7000	②6450	②4000	②2750
Mt-1, 3, 4, 5	4300 to 4376	5000	3525	2175	1475
Mt-2	4387, 4389	5000	3350	2050	1400
GS-1, 2	700 to 710, 4401 to 4415	5000	3650	2225	1490
GS-3, 4, 5, 6	4416 to 4469	5000	3750	2275	1500
SP-1, 2, 3	5000 to 5048	5000	4575	2825	2050
T&NO DF-4, 9	338 to 357	2425	9925	6275	5325
SSW	801 to 818	5000	3325	2025	1450

①Rating Benson to Mescal 2300.
②Applies to engs. 4126 to 4294 only.

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

SPECIAL INSTRUCTIONS—BOWIE SUBDIVISION

RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Bowie to San Carlos	San Carlos to Cutter	Cutter to Pinal	Pinal to Globe	Globe to Miami
DF-100	5200 to 5202	....	....	....	....	....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	5000	2200	1000	5000	2375
DF-109, 111	5250 to 5252, 5503 to 5505	....	....	....	....	....
DF-200 to 204	5100 to 5118	1400	850	395	3000	925
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....	....
DS-1 to 8	1000 to 1032	1350	825	365	4000	900
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	1675	1025	455	4000	1100
DS-110, 114	1442 to 1463, 1492 to 1499	2950	1500	695	4000	1625
DS-113	1486 to 1491	1775	1250	575	4000	1350
DS-200, 201	1900 to 1903	....	....	....	....	....
M-4	1617 to 1713	1625	800	415	2500	650
M-6, 8	1721 to 1803, 1824, 1825	1900	975	495	3000	775
M-9	1804 to 1817, 1826 to 1830	2000	1025	525	3000	825
M-11	1832 to 1835	2100	1075	550	3000	875
T-1	2248, 2252	1375	700	355	2500	550
T-23	2302 to 2310	....	....	....	....	....
T-28, 31	2312 to 2362	....	....	....	....	....
T-32	2363 to 2370, 2372 to 2384	2075	1250	525	3350	850
T-40	2371	....	....	....	....	....
P-1, 3, 5	2411, 2431, 2443	1800	900	440	3000	725
P-4	2402, 2410, 2414	1950	975	485	3000	775
P-6	2453, 2454, 2458	....	....	....	....	....
P-7	2476, 2477	....	....	....	....	....
P-8, 10	2461 to 2474, 2478 to 2483	....	....	....	....	....
P-8, 10	2475, 2484 to 2491	....	....	....	....	....
P-12	3122, 3123	....	....	....	....	....
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	2450	1500	655	4000	1000
C-18	3400 to 3409	2225	1150	600	4000	925
C-19	3410 to 3426	2325	1200	625	4000	975
TW-3	2937	1600	975	425	3500	650
TW-8	2914, 2918, 2923	2025	1050	525	3500	850

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

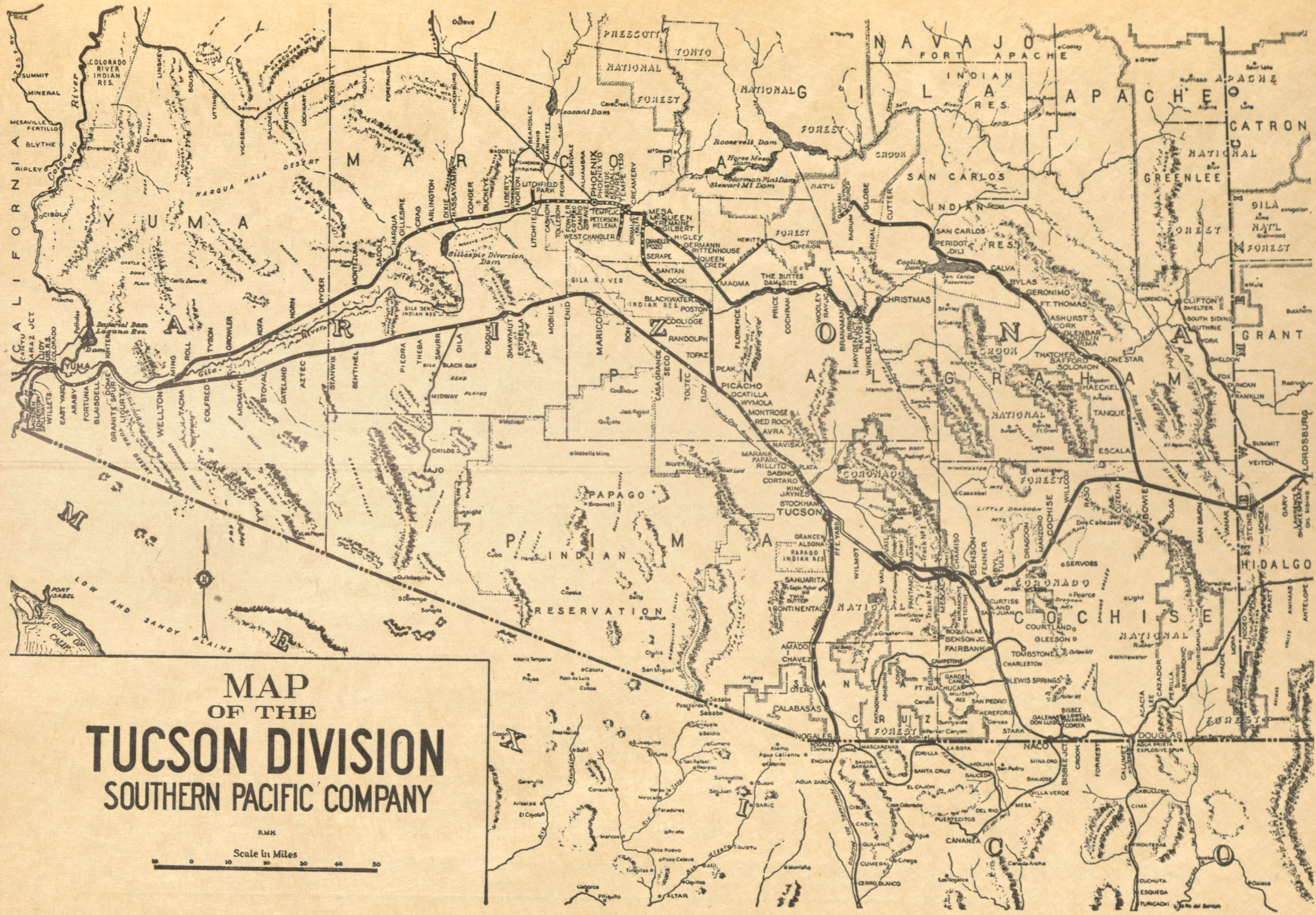
RATING OF ENGINES—In Units of 2000 Lbs. (Tons)

NOMINAL CLASS	ENGINE NUMBERS	Miami to Globe	Globe to Pinal	Pinal to San Carlos	San Carlos to Tanque	Tanque to Bowie
DF-100	5200 to 5202	....	....	....	....	....
DF-101 to 108, 112	5203 to 5249, 5253 to 5278	1975	1125	5000	3125	2325
DF-109, 111	5250 to 5252, 5503 to 5505	....	....	....	....	....
DF-200 to 204	5100 to 5118	555	440	3000	1200	925
DF-300, 301	4600 to 4603, 4700 to 4703	....	....	....	....	....
DS-1 to 8	1000 to 1032	520	405	4000	1150	900
DS-100 to 109, 111, 115	1300 to 1441, 1464 to 1485, 1514 to 1528	650	505	4000	1425	1100
DS-110, 114	1442 to 1463, 1492 to 1499	1150	775	4000	2150	1400
DS-113	1486 to 1491	800	625	4000	1750	1350
DS-200, 201	1900 to 1903	....	....	....	....	....
M-4	1617 to 1713	600	415	2500	1375	1050
M-6, 8	1721 to 1803, 1824, 1825	725	495	3000	1625	1250
M-9	1804 to 1817, 1826 to 1830	775	525	3000	1725	1325
M-11	1832 to 1835	800	550	3000	1775	1375
T-1	2248, 2252	525	355	2500	1175	900
T-23	2302 to 2310	....	....	....	....	....
T-28, 31	2312 to 2362	....	....	....	....	....
T-32	2363 to 2370, 2372 to 2384	600	525	3350	1750	1325
T-40	2371	....	....	....	....	....
P-1, 3, 5	2411, 2431, 2443	650	440	3000	1525	1150
P-4	2402, 2410, 2414	725	485	3000	1675	1275
P-6	2453, 2454, 2458	....	....	....	....	....
P-7	2476, 2477	....	....	....	....	....
P-8, 10	2461 to 2474, 2478 to 2483	....	....	....	....	....
P-8, 10	2475, 2484 to 2491	....	....	....	....	....
P-12	3122, 3123	....	....	....	....	....
C-5, 8, 9, 10	2513 to 2598, 2625 to 2860	900	655	4000	2085	1610
C-18	3400 to 3409	850	600	4000	1900	1475
C-19	3410 to 3426	900	625	4000	1975	1525
TW-3	2937	450	425	3500	1350	1050
TW-8	2914, 2918, 2923	775	525	3500	1750	1325

UNLESS AUTHORIZED BY SUPERINTENDENT, ENGINES WILL NOT BE PERMITTED TO OPERATE IN THOSE TERRITORIES WHERE NO RATING IS SHOWN IN ENGINE RATING TABLE.

SPEED TABLE

TIME PER MILE	MILES PER HOUR
36″	100
37″	97.3
38″	94.7
39″	92.3
40″	90
41″	87.8
42″	85.7
43″	83.7
44″	81.8
45″	80
46″	78.3
47″	76.6
48″	75
49″	73.5
50″	72
51″	70.6
52″	69.2
53″	67.9
54″	66.7
55″	65.5
56″	64.3
57″	63.1
58″	62.1
59″	61
1′00″	60
1′01″	59
1′02″	58.1
1′03″	57.1
1′04″	56.2
1′05″	55.4
1′06″	54.5
1′07″	53.7
1′08″	52.9
1′09″	52.2
1′10″	51.4
1′11″	50.7
1′12″	50
1′13″	49.3
1′14″	48.6
1′15″	48
1′16″	47.4
1′17″	46.8
1′18″	46.2
1′19″	45.6
1′20″	45
1′25″	42.4
1′30″	40
1′35″	37.9
1′40″	36
1′45″	34.3
1′50″	32.7
1′55″	31.3
2′00″	30
2′15″	26.7
2′30″	24
2′45″	21.8
3′00″	20
3′30″	17.1
4′00″	15
5′00″	12
6′00″	10
7′00″	8.6
7′30″	8
8′00″	7.5
10′00″	6



ARIZONA
CALIFORNIA
MEXICO
NEW MEXICO
YUMA
MARICOPA
PIMA
PINAL
GILA
GRAHAM
GREENLEE
COCHISE
SANTA CRUZ
NAVAJO
APACHE
CATRON
GRANT
HIDALGO
PAPAGO INDIAN RESERVATION
SAN CARLOS INDIAN RES.
FORT APACHE INDIAN RES.
COLORADO RIVER INDIAN RES.
GILA RIVER INDIAN RES.
CORONADO NATIONAL FOREST
CROOK NATIONAL FOREST
TONTO NATIONAL FOREST
PRESCOTT NATIONAL FOREST
YUMA
PHOENIX
TUCSON
NOGALES
DOUGLAS
LORDSBURG
BISBEE
GLOBE
Gulf of Calif.
LOW AND SANDY PLAINS
R.M.H.
Scale in Miles
10
0
10
20
30
40
50

MAP
OF THE
TUCSON DIVISION
SOUTHERN PACIFIC COMPANY